

The Lighthouse Green Fuels Order

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Abbreviations

Abbreviation	In full
ARN	Affected Road Network
ATI	Ancient Tree Inventory
AWI	Ancient Woodland Index
BAP	Biodiversity Action Plan
BAT-AEL	Best Available Technique-Associated Emission Level
BoCC	Birds of Conservation Concern
BNG	Biodiversity Net Gain
BTO	British Trust for Ornithology
CEMP	Construction Environmental Management Plan
CHP	Combined Heat and Power
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	The Countryside and Rights of Way Act
DCO	Development Consent Order
DEFRA	Department for Environment, Food & Rural Affairs
DEMP	Decommissioning Environmental Management Plan
DLL	District Level Licence
DMP	Dust Management Plan
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
eDNA	Environmental DNA
EIA	Environmental Impact Assessment
EPS	European Protected Species
ERIC NE	Environmental Records Information Centre for the North East of England
ES	Environmental Statement
EU	European Union
fCEMP	Framework Construction Environmental Management Plan
fLBMES	Framework Landscape and Biodiversity Mitigation and Enhancement Strategy
FLH	Functionally Linked Habitat
FLL	Functionally Linked Land
GLTA	Ground Level Tree Assessment
HDD	Horizontal Directional Drilling
HoPI	Habitats of Principal Importance
HRA	Habitats Regulations Assessment

HSI	Habitat Suitability Index
IASO	Invasive Alien Species Order
IEF	Important Ecological Feature
INCA	The Industry Nature Conservation Association
INNS	Invasive Non-Native Species
LGF	Lighthouse Green Fuels
LLCA	Local Landscape Character Areas
LNR	Local Nature Reserve
LPA	Local Planning Authority
LSO	Long Sea Outfall
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
NBW	Night-time Bat Walkover
NCA	National Character Area
NERC	The Natural Environment and Rural Communities Act 2006
NH ₃	ammonia
NMP	Noise Management Plan
NNR	National Nature Reserve
NO _x	nitrogen oxides
NO ₂	nitrogen dioxide
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NVA	Night Vision Aids
NWL	Northumbrian Water Ltd
OMH	Open Mosaic Habitats on previously developed land
PBRA	Preliminary Bat Roost Assessment
PCB	Polychlorinated Biphenyls
PEA	Preliminary Ecological Appraisal
PEC	Predicted Environmental Concentration
PEIR	Preliminary Environmental Information Report
PRF	Potential Roost Features
PRoW	Public Rights of Way
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAF	Sustainable Aviation Fuel
SCR	Selective Catalytic Reduction

SNCR	Selective Non-catalytic Reduction
SO ₂	sulphur dioxide
SoPI	Species of Principal Importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	The Wildlife and Countryside Act 1981
WeBS	Wetland Bird Survey
WFD	Water Framework Directive
WwTW	Wastewater Treatment Works
UK	United Kingdom
UKHab	UK Habitat Classification
ZoI	Zone of Influence

10 Terrestrial Ecology

10.1 Introduction

- 10.1.1 This chapter of the Environmental Statement (ES) presents the assessment of likely significant effects on terrestrial ecology arising from construction, operation and decommissioning of the Proposed Development. This chapter sets out the relevant legislation, policy, standards and guidance applied to the assessment process; consultation undertaken to inform the assessment; assessment methodology; the relevant baseline conditions upon which the assessment is based; embedded mitigation considered in place before the assessment is undertaken; the likely significant effects that may arise as a result of the Proposed Development considering embedded mitigation; further mitigation proposals to reduce or remove identified likely significant effects wherever possible; likely remaining residual effects following further mitigation; and any monitoring proposals.
- 10.1.2 The terrestrial ecology assessment considers impacts in relation to the extent of the entire Proposed Development (i.e. the 'Site'), which includes the 'Main Site' as well as the 'Wider Site' (including access and utility corridors and temporary construction laydown areas). Further information on the description of the Proposed Development can be found in **Chapter 3: Site and Surrounding Area (ES Volume I, Application Document Ref. 6.1)**.
- 10.1.3 Based on scoping exercises, field surveys and assessments completed to date, this chapter considers all possible terrestrial ecology features for the various Zones of Influence (Zoi) defined for the Site, as set out in Table 10.5 and Table 10.7. The ecological features identified include statutory and non-statutory designated sites, habitats of conservation importance, a range of protected and notable species, and invasive non-native species (INNS).
- 10.1.4 The ecological assessments for the Proposed Development have been split into two distinct and separate parts: Terrestrial Ecology, and Freshwater and Marine Ecology. This assessment does not duplicate information set out in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)**.
- 10.1.5 This chapter is intended to be read as part of the wider ES, with particular reference to the following (**ES Volume I, Application Document Ref. 6.1**):
- **Chapter 3: Site and Surrounding Area;**
 - **Chapter 4: Proposed Development;**
 - **Chapter 5: Construction Programme and Management;**

- **Chapter 8: Air Quality;**
 - **Chapter 9: Noise and Vibration;**
 - **Chapter 11: Freshwater and Marine Ecology;**
 - **Chapter 12: Water Environment;**
 - **Chapter 13: Landscape and Visual Amenity; and**
 - **Chapter 22: Cumulative and Combined Effects.**
- 10.1.6 There is overlap with the Air Quality, Noise and Vibration, Water Environment, and Landscape and Visual Amenity chapters due to likely impacts and effects on ecological features. Each chapter presents their baseline, methodology and results in relation to the ecological features considered in this chapter. The likely significant effects on ecological features associated with each chapter, including proposed mitigation measures, are presented in this chapter.
- 10.1.7 This chapter is supported by the following documentation:
- **Figures 10.1 to 10.7 (ES Volume II Application Document Ref. 6.2);**
 - **Appendix 10A: Preliminary Ecological Appraisal (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10B: Bat Survey and Acoustic Analysis Report (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10C: Breeding Birds Survey Report (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10D: Wintering Birds Survey Report (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10F: Terrestrial Invertebrates Survey Report (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10G: Site of Special Scientific Interest (SSSI) Assessment (ES Volume III, Application Document Ref. 6.3);**
 - **Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3;**

- **Report to Inform Habitats Regulations Assessment (HRA)** (Application Document Ref. 5.11); and
- **Framework Landscape and Biodiversity Mitigation and Enhancement Strategy (fLBMES) (Application Document Ref. 5.8)** including a Framework Biodiversity Net Gain (BNG) Plan in Appendix 5.8A of the fLBMES.

10.2 Legislation and planning policy context

Overview

- 10.2.1 A summary of the international, national and local legislation, planning policy and guidance relevant to the terrestrial ecology assessment for the Proposed Development is set out in Table 10.1.

Table 10.1 Summary of key legislation, policy and guidance.

Legislation, policy and guidance	Summary
Legislation	
Wildlife and Countryside Act 1981 (WCA).[Ref 1]	This is the primary legislation for the protection of animals, plants and habitats in the United Kingdom (UK). This legislation covers three main areas: • Wildlife protection, including protection of wild birds, their eggs and nests, protection of other animal and protection of plants; • Nature conservation, countryside and National Parks; and • Public rights of way (PRoW).
Countryside and Rights of Way (CRoW) Act 2000. [Ref 2]	The CRoW Act has amended the WCA in England and Wales, strengthening the protection afforded to SSSIs and the legal protection for threatened species.
The Conservation (Natural Habitats &c.) (Amendment) Regulations 2007. [Ref 3]	The Conservation (Natural Habitats &c.) (Amendment) Regulations 2007 further adds the word 'recklessly' to the wording of the offences listed under Section 9(4) of the WCA. This alteration means a person is guilty of an offence if intentionally or recklessly: • he damages or destroys any structure or place which any wild animal specified in Schedule 5 uses for shelter or protection; • he disturbs any such animal while it is occupying a structure or place which it uses for shelter or protection; or • he obstructs access to any structure or place which any such animal uses for shelter or protection."
Natural Environment and Rural Communities (NERC) Act 2006. [Ref 4]	The NERC Act is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government policy. It established a new independent body (Natural England) responsible for conserving, enhancing, and managing England's natural environment for the benefit of current and future generations, thereby contributing to sustainable development.

Legislation, policy and guidance	Summary
	The NERC Act made amendments to both the WCA and the CRoW Act. Section 40 of the NERC Act imposes a duty on public authorities to “<i>in exercising (their) functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity</i>”. Section 41 of the NERC Act requires the Secretary of State to: “publish a list of the living organisms and types of habitat which in the Secretary of State’s opinion are of principal importance for the purpose of conserving biodiversity”. These are referred to as Habitats/Species of Principal Importance (HoPI/SoPI).
The Conservation of Habitats and Species Regulations 2017 (‘the Habitats Regulations’). [Ref 5]	The Conservation of Habitats and Species Regulations 2017 (the ‘Habitats Regulations’) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Habitats Regulations transpose the Habitats Directive (EC Directive 92/43/EEC) into national law. They also transpose elements of the Birds Directive (2009/147/EC) in England and Wales. All species listed under Annex IV of the Habitats Directive (92/43/EEC) require strict protection and are known as European Protected Species (EPS). Under Regulation 42 of the Habitats Regulations, it is unlawful to: • Deliberately kill, capture or disturb; • Deliberately take or destroy the eggs of; and • Damage or destroy the breeding site/resting place of any species protected under this legislation. If it is determined that impacts to an EPS during a development are unavoidable then the works may need to be carried out under a site-specific mitigation licence from the Statutory Nature Conservation Organisation, in this case Natural England. Certain EPS are also listed under Annex II of the Habitats Directive (92/43/EEC) and are afforded protection by the establishment of core areas of habitat known as SACs. In addition, all bird species listed under Annex I of the Birds Directive (2009/147/EC) are rare or vulnerable and afforded protection by the classification of SPAs. This means that ‘Annex II species’ under the Habitats Directive (92/43/EEC) and Annex I bird species under the Birds Directive (2009/147/EC) are a relevant consideration in a HRA.
The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. [Ref 6]	Following the UK’s exit from the European Union (EU), the Habitats Regulations were amended by the Conservation of Habitats and Species Regulations 2019. The changes made were only those necessary to ensure that they remain operable now that the UK has left the EU.
The Ramsar Convention. [Ref 7]	The UK is a signatory to the Ramsar Convention. The Convention has three main ‘pillars’ of activity: the designation of wetlands of international importance as Ramsar sites, the promotion of the wise use of all wetlands in the territory of each country, and international co-operation with other countries. The UK has chosen to underpin the designation of its Ramsar sites through prior notification of these areas as SSSIs in England. Accordingly, these receive statutory protection under WCA (see above).

Legislation, policy and guidance	Summary
The Planning and Infrastructure Act 2025 (Commencement No. 3 and Transitional Provisions) Regulations 2026. [Ref 8]	These Regulations are the third commencement regulations made under the Planning and Infrastructure Act 2025 ("the Act"). Regulation 3 brings into force, on the day after which these Regulations are made, Part 1 of Schedule 5 to the Act (except paragraph 14(2) which amends the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations") by extending the protection in Part 6 of those Regulations to Ramsar sites in England. These amendments introduce a statutory requirement for Ramsar sites to be treated in the same manner as European sites when carrying out assessments under those Regulations.
Environment Act 2021. [Ref 9]	The Environment Act 2021 has two main functions: • To give a legal framework for environmental governance in the UK; and • To bring in measures for improvement of the environment in relation to waste, resource efficiency, air quality, water, nature and biodiversity, and conservation. The Act includes provisions to strengthen and improve the existing duty on public bodies to conserve and enhance biodiversity, including mandating BNG through the planning system. Schedule 14 of the Act makes provision for BNG to be a condition of planning permission in England only and has been mandatory under Schedule 7A of the Town and Country Planning Act (1990) for major developments since 12 February 2024 and small sites since 2 April 2024. Schedule 14 also specifies that biodiversity gains are to be assessed using the metric published by the SoS and a 10% gain is mandatory for such developments. The vast majority of this Act does not make any immediate changes for organisations other than regulators. Changes to duties for businesses and other organisations are expected in subsequent legislation made under this Act. The Planning Act 2008, as amended by Section 99 and Schedule 15 of the Environment Act 2021, introduces a BNG requirement for Nationally Significant Infrastructure Projects (NSIPs) through amendments to sections 103 to 105 and the insertion of Schedule 2A. Under this statutory framework, the SoS may not grant an application unless satisfied that the proposed development meets the biodiversity gain objective as set out in the relevant biodiversity gain statement to which the development relates. Mandatory BNG provisions will apply to NSIP applications made on or after the 2 November 2026 (i.e. mandatory BNG does not apply to the Proposed Development). The Government has issued a suite of guidance documents and BNG Statements relevant to each NSIP type (see guidance section).
The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. [Ref 10]	UK statutory instrument that supports the implementation of BNG under the Environment Act 2021, specifically in relation to irreplaceable habitats. Irreplaceable habitats are those that are: Very difficult or impossible to recreate once lost; and/or

Legislation, policy and guidance	Summary
	Often have high ecological value, due to their age, uniqueness, or biodiversity. Examples include: • Ancient woodland; • Veteran trees; • Blanket bog; • Limestone pavements • Coastal sand dunes; and • Saltmarshes and lowland fens.
Protection of Badgers Act 1992. [Ref 11]	The Protection of Badgers Act makes it illegal to wilfully take, kill, injure, possess or ill-treat a badger (<i>Meles meles</i>). Under the Act, badger setts are also protected against intentional or reckless interference. Sett interference includes damaging or destroying a sett, obstructing access to any part of the sett, and disturbing a badger whilst it is occupying a sett. The Act defines a badger sett as “any structure or place, which displays signs indicating the current use by a badger” and Natural England takes this definition to include seasonally-used setts that are not occupied but that show signs of recent use by badgers. If impacts to badgers or their setts are unavoidable during a development then authorised sett disturbance requires a mitigation licence, issued by Natural England.
Council Directive (92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) 1992. [Ref 12]	The Habitats Directive (92/43/EEC) provides legal protection for habitats and species of European importance. This Directive was transposed into UK law by the Conservation of Habitats and Species Regulations 2017.
Council Directive (2009/147/EC) on the Conservation of Wild Birds (Birds Directive) 2009. [Ref 13]	The EU meets its obligations for bird species under the Bern Convention and Bonn Convention and more generally by means of Directive 2009/147/EC (Birds Directive) on the conservation of wild birds. In the UK, the provisions of the Birds Directive (2009/147/EC) are implemented through WCA and the Conservation of Habitats and Species Regulations 2017 (as well as other legislation related to land and sea). The main provisions of the Directive include: • the maintenance of populations of all wild bird species across their natural range; • the establishment of a general scheme of protection for all wild birds; requirements to ensure that introduction of non-native birds do not threaten other biodiversity; and • the identification and classification of SPAs for rare or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance (Article 4). Together with SACs designated under the Habitats Directive (92/43/EEC), SPAs form a network of European protected areas known as Natura 2000.

Legislation, policy and guidance	Summary
The Invasive Alien Species (Enforcement and Permitting) Order 2019. [Ref 14]	The Invasive Alien Species Order (IASO) 2019 transposes EU legislation (Regulation (EU) No 1143/2014), which was introduced into UK law on 01 December 2019. Listed in the Order are species of concern that are banned from being imported, transported, sold, used, kept, bred/grown, or released into the environment or allowed to reproduce. Signal crayfish (<i>Pacifastacus leniusculus</i>), amongst other invasive non-native crayfish species, are included in the Order. Transport of live invasive crayfish species from any site is illegal under the legislation. Management, development, maintenance, or other works at sites which have invasive crayfish species present therefore require practical and legal consideration that may have associated cost implications. These also extend to conservation actions surrounding the eradication of invasive crayfish species present at site. Regarding crayfish, the legislation superseded the 'The Prohibition of Keeping of Live Fish (Crayfish) Order 1996.' Regulation of the legislation is enforced by Natural England in England. Eight plant species are identified within IASO (2019) as being widely spread in England and Wales and therefore require management. This includes but is not limited to Nuttall's waterweed (<i>Elodea nuttallii</i>), Himalayan balsam (<i>Impatiens glandulifera</i>), curly waterweed (<i>Lagarosiphon major</i>), and floating pennywort (<i>Hydrocotyle ranunculoides</i>). This has implications for works at any site where such invasive plant species are present, and appropriate management controls are required.
Policy	
Overarching National Policy Statement (NPS) for Energy (EN-1) 2025. [Ref 15]	NPS EN-1 contains a number of assessment principles and generic impacts of key relevance for the purpose of the assessment of environmental impacts on ecological features. Key principles and impacts include: 4.6 Environmental and Biodiversity Net Gain Although achieving BNG is not currently an obligation on Development Consent Order (DCO) applications, Schedule 15 of the Environment Act 2021 contains provisions which, when commenced on 2 November 2026, mean the Secretary of State may not grant an application for a DCO unless satisfied that a biodiversity gain objective is met in relation to the onshore development in England to which the application relates (Paragraph 4.6.1). The Government has issued a suite of guidance documents and BNG Statements relevant to each NSIP type [Ref 30, Ref 31]. The Application for the Proposed Development is being made prior to the mandatory provisions coming into force and therefore they do not apply to this application. NPS EN-1 also states that "NSIP proposals, whether onshore or offshore, should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity" (Paragraph 4.6.6) and "Biodiversity net gain should be applied after compliance with the mitigation hierarchy and does not change or replace existing environmental obligations." (Paragraph 4.6.10).

Legislation, policy and guidance	Summary
	The Proposed Development will seek opportunities to mitigate and compensate the natural environment in compliance with mitigation hierarchy and environmental obligations. Voluntary contributions towards No Net Loss (NNL), quantified using the Defra BNG metric, will also be sought in tandem with these obligations. The Proposed Development's approach to NNL and delivery strategy are detailed within the Framework BNG Plan (Appendix 5.8A of the fLBMES (Application Document Ref. 5.8)). 5.4 Biodiversity and Geological Conservation Consideration of whether a project may have a significant effect on a European site, or any site afforded the same protection, such as Ramsar sites (Paragraphs 5.4.4 to 5.4.6). Avoiding granting planning consent in the first instance where a proposed development is likely to have an adverse effect on a Site of Special Scientific Interest (SSSI), either alone or in combination with other developments. An exception should only be made where the benefits (including need) of the development clearly outweigh any adverse effects (Paragraph 5.4.7 and 5.4.8). The important role played by sites of regional and local biodiversity value, including Local Nature Reserves (LNRs) and Local Wildlife Sites (LWS), in meeting overall national biodiversity targets (Paragraph 5.4.12). Avoidance of the loss of ancient woodland and veteran trees (Paragraph 5.4.16). The use of planning obligations to ensure that other species and habitats of principal conservation importance are protected from the adverse effects of development (Paragraph 5.4.56).
The National Planning Policy Framework (NPPF) 2026. [Ref 16]	The NPPF sets out the Government's planning policies for England and Wales and how these are expected to be applied. The Framework acts as guidance for local planning authorities (LPAs) and decision-makers, both in drawing up plans and making decisions about planning applications. Chapter 19 of the framework 'Conserving and enhancing the natural environment' incorporates policies requiring that development impacts on biodiversity, habitats, species and landscapes are minimised and that opportunities for nature recovery are supported. Policies N2, N4, N5 and N6 state that planning policies and decisions should contribute to and enhance the natural and local environment by: • Protecting and enhancing habitats, biodiversity, geodiversity and landscapes of importance, including areas designated for their environmental value; • Recognising the environmental qualities of land proposed for development, including habitats, landscape character and the natural beauty of the countryside, and identifying opportunities for those qualities to be conserved or enhanced; • Maintaining the character of the undeveloped coast, while improving public access to it where appropriate; • Supporting nature recovery by strengthening ecological networks, minimising adverse impacts on biodiversity and incorporating

Legislation, policy and guidance	Summary
	features which support priority or threatened species such as swifts (<i>Apus apus</i>), bats and hedgehogs (<i>Erinaceus europaeus</i>); • Using green infrastructure and nature-based solutions to secure multiple environmental benefits, including biodiversity enhancement, water management, climate change mitigation and recreation; and • Conserving and enhancing existing natural features of visual, historic or nature conservation value and integrating development sensitively into its surroundings. Policy N6 'Areas of particular importance for biodiversity and Geodiversity' states that LPAs should apply the following principles when determining planning applications: • If significant harm to biodiversity resulting from a development 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; • Development affecting a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs; • 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; and • Development proposals should contribute positively to the natural environment and support nature recovery, including through biodiversity enhancement and the strengthening of ecological networks.
Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System 2005. [Ref 17]	This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It defines statutory nature conservation-sites and protected species as a material consideration in the planning process.
Stockton-on-Tees Borough Council – Local Plan – Adopted January 2019. [Ref 18]	The Local Plan sets out the Council's policies and proposals to guide planning decisions and establishes the framework for the sustainable economic growth and development of the Borough by 2032. Policy EN5 - Preserve, Protect and Enhance Ecological Networks, Biodiversity and Geodiversity states that: 1. The Council will protect and enhance the biodiversity and geological resources within the Borough. Development proposals will be supported where they enhance nature conservation and management, preserve the character of the natural environment and maximise opportunities for biodiversity and geological conservation particularly in or adjacent to

Legislation, policy and guidance	Summary
	Biodiversity Opportunity Areas in the River Tees Corridor, Teesmouth and Central Farmland Landscape Areas. 2. The Council will preserve, restore and re-create priority habitats alongside the protection and recovery of priority species. 3. Ecological networks and wildlife corridors will be protected, enhanced and extended. A principal aim will be to link sites of biodiversity importance by avoiding or repairing the fragmentation and isolation of natural habitats. 4. Sites designated for nature or geological conservation will be protected and, where appropriate enhanced, taking into account the following hierarchy and considerations: a) Internationally designated sites – Development that is not directly connected with or necessary to the management of the site, but which is likely to have a significant effect on any internationally designated site, irrespective of its location and when considered both alone and in combination with other plans and projects, will be subject to an Appropriate Assessment. Development requiring Appropriate Assessment will only be allowed where: It can be determined through Appropriate Assessment, taking into account mitigation, the proposal would not result in adverse effects on the site's integrity, either alone or in combination with other plans or projects; or as a last resort, where, in light of negative Appropriate Assessment there are no alternatives and the development is of overriding public interest, appropriate compensatory measures must be secured. b) Nationally designated sites - Development that is likely to have an adverse effect on a site, including broader impacts on the national network of SSSI and combined effects with other development, will not normally be allowed. Where an adverse effect on the site's notified interest features is likely, a development will only be allowed where: The benefits of the development, at this site, clearly outweigh both any adverse impact on the sites notified interest features, and any broader impacts on the national network of SSSI's; • No reasonable alternatives are available; and • Mitigation, or where necessary compensation, is provided for the impact. c) Locally designated sites: Development that would have an adverse effect on a site(s) will not be permitted unless the benefits of the development clearly outweigh the harm to the conservation interest of the site and no reasonable alternatives are available. All options should be explored for retaining the most valuable parts of the sites interest as part of the development proposal with particular consideration given to conserving irreplaceable features or habitats, and those that cannot readily be recreated within a reasonably short timescale. 5. Development proposals should seek to achieve net gains in biodiversity wherever possible. It will be important for biodiversity and geodiversity to be considered at an early stage in the design process so that harm can be avoided and wherever possible enhancement achieved. Detrimental impacts of development on biodiversity and geodiversity, whether individual or cumulative should be avoided. Where this is not possible, mitigation and lastly compensation must be provided

Legislation, policy and guidance	Summary
	as appropriate. The Council will consider the potential for a strategic approach to biodiversity offsetting in conjunction with the Tees Valley Local Nature Partnership and in line with the above hierarchy. 6. When proposing habitat creation it will be important to consider existing habitats and species as well as opportunities identified in the relevant Biodiversity Opportunity Areas. This will assist in ensuring proposals accord with the 'landscape scale' approach and support ecological networks. 7. Existing trees, woodlands and hedgerows which are important to the character and appearance of the local area or are of nature conservation value will be protected wherever possible. Where loss is unavoidable, replacement of appropriate scale and species will be sought on-site, where practicable.
Redcar and Cleveland Borough Council - Local Plan - Adopted May 2018. [Ref 19]	The Local Plan sets out the policies and proposals to guide planning decisions and establishes the framework for sustainable economic growth and development of the Borough by 2032. Policy LS2 – Coastal Area Spatial Strategy Promote and support the sustainable use of the foreshore and dunes in the South Gare and Coatham Sands Site of Special Scientific Interest (SSSI), Redcar Rocks SSSI and the Coatham Marsh Nature Reserve whilst protecting and enhancing the features of the Teesmouth and Cleveland Coast SPA/Ramsar site. Policy N 4 - Biodiversity and Geological Conservation states that: • Internationally Important Sites - Priority will be given to protecting our internationally important sites, including the Teesmouth and Cleveland Coast Special Protection Area (SPA)/Ramsar and European Marine Site, and the North York Moors SPA and Special Area of Conservation (SAC). Development that is not directly related to the management of the site, but which is likely to have a significant effect on any internationally designated site, irrespective of its location and when considered both alone and in combination with other plans and projects, will be subject to an Appropriate Assessment. • Nationally Important Sites - Development that is likely to have an adverse impact on nationally important SSSI sites, including broader impacts on the national network and combined effects with other development, will not normally be allowed. Where an adverse effect on the site's notified interest features is likely, an exception will only be made where: the benefits of the development, at this site, clearly outweigh both any adverse impact on the features of the site that makes it of special scientific interest, and any broader impacts on the network of SSSIs; no reasonable alternatives are available; and mitigation, or where necessary compensation, is provided for the impact. • Locally Important Sites - Development that is likely to have an adverse impact on Local Sites (LWS and Local Geological Sites) or LNRs will only be approved where: the benefits clearly outweigh any adverse impact on the site; no reasonable alternatives are available; and mitigation, or where necessary compensation, is provided for the impact.

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	Wildlife corridors and other habitat networks will be protected and enhanced, particularly hedgerows, watercourses and linking habitat features. Opportunities to de-culvert watercourses will be encouraged.
Tees Valley Biodiversity Action Plan (BAP) (2012). [Ref 20]	The Tees Valley Nature Partnership is a collection of organisations and individuals working together to conserve, enhance and promote biodiversity in the Tees Valley region. The current Tees Valley BAP has been in place since January 2012 and covers the local authority areas of Hartlepool, Stockton, Middlesbrough, Redcar, and Cleveland. The aim of the Tees Valley BAP is to identify sub-regional priorities for nature conservation and propose actions to conserve, maintain, enhance and increase locally important species and habitats.
Guidance	
Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. [Ref 21]	The terrestrial ecology assessment has been undertaken using the approach detailed in the CIEEM Guidelines for Ecological Impact Assessment (EclA), hereafter referred to as 'the CIEEM EclA guidelines'. These guidelines represent the current best practice for assessing the ecological impacts of development projects. These guidelines were amended in September 2019, April 2022 and September 2024. In 2019 the amendments were the distinction between impacts and effects were clarified, the assessment of significance was improved and made more consistent, additional explanations of important ecological features were introduced and cumulative effect assessments were refined. In 2022, the amendments included greater emphasis on soils and peatlands, clarification of ecological receptors and improved consistency of assessment. The 2024 amendments included expanded guidance on peatlands and soils, stronger ecosystem approach and improved integration through the EclA process.
CIEEM (2017). Guidelines for Preliminary Ecological Appraisal (PEA). [Ref 22]	The terrestrial ecology assessment has been undertaken with consideration of CIEEM guidance for PEAs. The purpose of this guidance is to set out the appropriate approach to undertaking PEAs and the appropriate application of such assessments within the planning process.
CIEEM (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. [Ref 23]	These guidelines have been developed by UK biodiversity data specialists and are aimed at those who are using biodiversity data to support the development planning process (e.g. LPAs and ecological consultants). The guidelines provide guidance on when and where it is advisable to source and use biodiversity data, particularly in relation to developments.
Guidance on Nationally Significant Infrastructure Projects: Advice on Habitat Regulations	The terrestrial ecology assessment has been undertaken with consideration of the Planning Inspectorate's guidance which summarises the applicant and decision maker obligations under the Habitats Regulations in the context of NSIPs.

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Assessments.(2026) [Ref 24]	The guidance was updated in August 2026 to reflect some of the key changes to the Planning Act 2008 process introduced by the Planning and Infrastructure Act 2025.
Air emissions risk assessment for your environmental permit (2025) [Ref 25]	The terrestrial ecology assessment has been undertaken with consideration of the Environment Agency and Department for Environment, Food & Rural Affairs (DEFRA) guidance regarding the impact of emissions on protected conservation areas.
BS 42020: 2013 Biodiversity — Code of practice for planning and development. [Ref 26]	BS 42020:2013 provides recommendations for making sure that decisions taken at each step of the planning process are informed by appropriate ecological information.
BS 5837:2012 – Trees in relation to design, demolition and construction – Recommendations. [Ref 27]	BS 5837:2012 gives recommendations and guidance on the relationship between trees and the design, demolition and construction process. It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.
Natural England/Forestry Commission (2022). Ancient woodland, ancient trees and veteran trees: advice for making planning decisions. [Ref 28]	This best practice guidance provides principles to adopt with specific reference to protection measures for ancient/veteran trees.
Stanbury et al. (2021). Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. [Ref 29]	Conservation importance is ascribed to certain species by their presence on the Red List and Amber List of Birds of Conservation Concern (BoCC5) in the UK. The fifth review of the status of wild birds in Great Britain was undertaken in 2021. In September 2024, an addendum was made to the BoCC5 list for 28 species of current or former breeding seabird in the UK due to a delay in the publication of the results from the most recent census of breeding seabirds in Britain and Ireland, Seabirds Count due to the outbreak of Covid-19.
Biodiversity net gain: nationally significant infrastructure projects. [Ref 30]	This government webpage lists guidance that's relevant to BNG for NSIPs. In England, BNG will be mandatory for NSIPs from 2 November 2026. NSIP developers who apply for a DCO on or after 2 November 2026 will need to deliver at least 10% BNG.
Biodiversity gain statements for nationally significant infrastructure projects. [Ref 31]	This government webpage provides statements which set out the BNG requirements for NSIPs including how they must calculate, deliver and report on BNG.
Consultation outcome, Biodiversity net gain for nationally significant	The consultation on the implementation of BNG for NSIPs was launched in May 2025 and ran for 8 weeks. The consultation outlined government's proposals for the BNG requirement for NSIPs and proposed model text for a biodiversity gain statement that would apply across NSIP sectors.

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infrastructure projects. [Ref 32]	This document summarises responses to the BNG for NSIPs consultation and the government's response to that consultation. The sections of the document mirror the sections of the model text of the biodiversity gain statement in the consultation.

10.3 Assessment methodology and significance criteria

Introduction

- 10.3.1 This terrestrial ecology assessment for the Proposed Development has been undertaken in line with the legislation, policy and guidance outlined in Section 10.2 above.

Consultation

- 10.3.2 The following consultations were carried out regarding the Proposed Development:
- Natural England;
 - i. meeting held on 27 October 2025 to discuss the Environmental Impact Assessment (EIA) Scoping Report and baseline survey requirements;
 - ii. written consultation regarding the EIA Scoping Report received on 30 October 2025;
 - iii. written consultation regarding the Preliminary Environmental Information Report (PEIR) received on 13 January 2026;
 - iv. meeting held on 5 March 2026 to discuss the PEIR; and
 - v. written consultation regarding the PEIR addendum received on 13 May 2026.
 - Environment Agency (EA);
 - i. written consultation regarding the EIA Scoping Report received on 30 October 2025;
 - ii. written consultation regarding the PEIR received on 13 January 2026;
 - iii. Meeting held regarding the PEIR on 17 April; and
 - iv. written consultation regarding the PEIR addendum received on 13 May 2026

Scoping opinion

- 10.3.3 An **EIA Scoping Opinion (Appendix 2B, ES Volume III, Application Document Ref. 6.3)** was received on 11 November 2025 from the Planning Inspectorate (PINS). Refer to Table 10.2 for a summary of the scoping opinion comments relevant to this chapter received from statutory environmental bodies and the Applicant's responses.

Table 10.2 Scoping opinion responses relevant to Terrestrial Ecology from PINS

Scoping Opinion ID	Comment	Applicant response
222	The Scoping Report separates the ecology assessment into two chapters: Terrestrial and Freshwater and Marine. However, the Scoping Report does not clearly indicate which habitats associated with designated sites (SPA, Ramsar, and SSSI) would be assessed within each chapter, particularly intertidal habitats. To ensure a robust assessment of potential impacts and the scope adequately covers all ecological receptors, the ES should clarify which chapter will address which habitats and associated species within designated sites (including intertidal, coastal, and transitional habitats) and explain how overlaps between terrestrial and marine ecological receptors will be managed. It should also be confirmed that all relevant qualifying features of designated sites will be comprehensively assessed across the two chapters. To avoid gaps or duplication, appropriate cross-referencing between chapters should be included. Furthermore, the assessment should consider cumulative effects on relevant habitats and associated designated site features, particularly where impacts may arise from both terrestrial and marine activities.	Intertidal habitats are considered within this chapter. Furthermore, all impacts on international designated sites are considered with the Report to Inform HRA (Application Document Ref. 5.11) .
225	The Scoping Report identifies construction and operational light spill as a potential impact on terrestrial and aquatic ecological receptors. An assessment of light emissions is scoped out of the landscape and visual impact assessment (see ID 3.6.8), however the ES should provide estimates of the expected light emissions, describe the proposed lighting strategy, and assess the likely significant effects on ecological receptors where these are likely to occur.	The landscape and visual impact assessment (Chapter 13: Landscape and Visual Amenity (ES Volume I, Application Document Ref. 6.1)) provides an estimate of the expected light emissions, and this chapter assesses the impacts on ecological features.
3.3.1	The Scoping Report does not refer to the assessment of reptiles during the operation and decommissioning phases. The Scoping Report states that currently there is no data obtained for this potential ecological receptor. In the absence of information about the extent of potential habitat	Habitats within the Main Site have been deemed unsuitable for reptiles. The Wider Site has been surveyed as part of the full PEA (Appendix 10A, ES

Scoping Opinion ID	Comment	Applicant response
	loss, other potential impact pathways and mitigation measures the Inspectorate is unable to scope this matter out during the operation and decommissioning phases.	Volume III, Application Document Ref. 6.3).
3.3.2	The Scoping Report states that the study areas are based on zones of influence (Zol). The Zol for each terrestrial ecological receptor are outlined in table 7.2, where fixed distances are proposed. Paragraph 7.4.3 states that the Zol for each terrestrial ecological receptor have been defined based on current best practice guidelines and current project information. The ES should clarify the methodology for determining the Zol for terrestrial ecological receptors based on the potential for likely significant effects rather than being based on a fixed distance. The ES should ensure a consistent approach has been applied for assessing impacts on ecological receptors within each aspect chapter of the ES. The ES should demonstrate how the study area has been informed by potential impact-pathways and where possible, should be agreed with relevant consultation bodies.	Study areas (referred to as Zol) have been standardised across the Terrestrial Ecology (this chapter) and the Marine and Freshwater Ecology chapter (Chapter 11, ES Volume I, Application Document Ref. 6.1) .
3.3.3	Table 7.3 outlines the survey buffer from the site for the identified ecological receptors. The Scoping Report does not provide any detail related to field surveys. The applicant should agree the scope, timing and extent of survey effort with relevant consultation bodies prior to survey work commencing. Evidence of any agreement should be presented in the ES.	Field survey scope was agreed with Natural England during consultation and the field survey reports detail their Zol and scope for the relevant ecological feature (see Appendix 10A to 10F (ES Volume III, Application Document Ref. 6.3))).
3.3.4	Paragraph 7.7.1 states that the baseline conditions for the terrestrial ecology assessment would be defined through a full desk study, PEA and a series of field surveys. While paragraph 7.10.1 states that the PEA would identify the habitats within the Main Site. The ES should ensure that the PEA is undertaken to cover the entire site. Effort should be made to agree the study area(s) with relevant consultation bodies.	A desk study and PEA has been completed for the Site(including the Main Site and Wider Site) where access was permitted (see Appendix 10A, ES Volume III, Application Document Ref. 6.3) . The scope of additional field surveys was determined through the desk study, PEA and consultation with Natural England (see paragraph 10.3.2 and Table 10.3).
3.3.5	The Scoping Report states that the assessment methodology would follow the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (Terrestrial, Freshwater and Coastal). Paragraph 7.16.4 states that the significance of	The ES assessment has been carried out in line with the CIEEM guidelines.

Scoping Opinion ID	Comment	Applicant response
	residual effects will be assessed following the implementation of embedded mitigation, with additional mitigation and compensation measures identified thereafter to offset significant residual effects. This approach does not appear to align with the CIEEM Guidelines. Residual effects should be assessed after all feasible mitigation measures, including both embedded and additional have been implemented. To avoid of doubt, the ES should clearly explain the impact assessment process with reference to the relevant guidelines, including how mitigation measures are considered when determining the significance of residual effect.	
3.3.6	The Site Improvement Plan for Castle Eden Dene SAC identifies that nitrogen deposition already exceeds site relevant critical loads and therefore there is a need to “control, reduce and ameliorate atmospheric nitrogen impacts”. This matter should be addressed in the ES. The applicant’s attention is drawn to NE’s consultation response provided in Appendix 2 of this Opinion.	Castle Eden Dene SAC has been considered within this chapter and in the Report to Inform HRA (Application Document Ref. 5.11) in relation to nitrogen impacts.
3.3.7	The Scoping Report does not refer to any potential impacts on SPA bird populations through the permanent and temporary direct loss of functionally linked land (FLL) within the proposed development site. The ES should assess any potential significant effects on FLL as a result of the proposed development. The applicant’s attention is drawn to the consultation response from NE (appendix 2 of this Scoping Opinion) in this regard.	This chapter considers the loss of FLL and its effect on designated sites/ecological features.
3.3.8	Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Any reports or data relating to vulnerable species/features (such as badgers) will not be placed into the public domain.

Statutory consultation

- 10.3.4 The PEIR was published for statutory consultation on 2 December 2025 and the consultation period ended on 13 January 2026.
- 10.3.5 Refer to Table 10.3 for a summary of the statutory consultation comments relevant to this chapter received from statutory environmental bodies and the Applicant's responses.
- 10.3.6 An addendum to the PEIR was published for targeted consultation on 13 April 2026 and the consultation period ended 13 May 2026.
- 10.3.7 Refer to Table 10.4 for a summary of the targeted consultation relevant to this chapter received from statutory environmental bodies and the Applicant's response.

Table 10.3 Statutory consultation responses relevant to Terrestrial Ecology

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
Baseline characterisation – survey data acquisition			
Chapter 9: Figure 9.3	Natural England	No baseline sound survey locations near to bird supporting habitat have been established so it will not be possible to assess changes to noise levels experienced by bird features. Measure baseline noise levels at important bird supporting habitat.	Noise modelling has considered ecological features including habitats which are either known to or are likely to support important bird populations. These features were determined using desk study information and consultation with The Industry Nature Conservation Association (INCA) (bird field surveyors). Baseline sound surveys have been completed at select locations within and surrounding the Site to represent terrestrial ecological features (see Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors (ES Volume III, Application Document Ref. 6.3)).
Chapter 10: Table 3.2	Natural England	A 250 m survey buffer has been proposed for breeding and non-breeding birds. A number of waterbirds can be sensitive to disturbance over longer distances than this. Curlew (<i>Numenius arquata</i>) are particularly sensitive to disturbance. See https://www.nature.scot/doc/disturbancedistances-selected-scottish-bird-speciesnaturescot-guidance. Surveys for similar scale development projects have used a 500 m buffer for non-breeding birds. Extend bird survey buffer to enable the impacts of disturbance to be fully assessed.	In line with the comment and consultation with Natural England the wintering bird survey buffer was extended to include all accessible habitats within 500m of the Main Site and remained at 250m for the Wider Site.

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
Chapter 10: Table 3.6.1	Natural England	Saltmarsh is not included as a HoPI.	Coastal saltmarsh has been referenced as a HoPI.
Chapter 10: Table 4.1	Natural England	Sandwich tern (<i>Thalasseus sandvicensis</i>) and waterbird assemblage have not been correctly listed as a feature of the Ramsar.	Sandwich tern and waterbird assemblage under the Teesmouth and Cleveland Coast Ramsar designation have been referenced in the desk study and are considered in this chapter.
Chapter 10: Paragraph 6.3.9	Natural England	The PEIR states that noise impacts will be assessed in detail in the ES. Figure 9.4 in Chapter 10 identifies a number of Noise Sensitive Features, but it is understood these are related to human health impacts. It is important that noise modelling includes all important areas for seals and bird features, both with the protected sites and outside in FLL.	Noise modelling has considered ecological features including habitats which are either known to or are likely to support important bird populations. These features were determined using desk study information (e.g. designated sites) and consultation with INCA (e.g. FLL). Refer to Marine and Freshwater Ecology chapter (Chapter 11, ES Volume I, Application Document Ref. 6.1) for assessment for seals.
Impact assessment – methodology			
Chapter 10: Paragraph 4.2.10	Natural England	Saltburn Gill SSSI is scoped out of the assessment. One of the reasons given is that deciduous woodland is resilient to air quality impacts. This is not the case. Deciduous woodland often supports significant lichen and bryophyte communities and can be very sensitive to air quality impacts. However, Saltburn Gill is included as an ecological feature in a number of modelling outputs so does appear to have been assessed.	Potential impacts upon the deciduous woodland qualifying feature, including lichens and bryophytes, for Saltburn Gill SSSI have been considered within this chapter (10.4.15).

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
Chapter 10: Paragraph 4.3.20	Natural England	Breeding bird assemblage species of Teesmouth and Cleveland Coast SSSI do not seem to have been fully assessed in the PEIR. For example, Cetti's warbler <i>Cettia cetti</i> and Marsh harrier <i>Circus aeruginosus</i> were both recorded from the Main Site but are only noted as Schedule 1 species. They are also scoring species on the SSSI breeding bird assemblage of 'Sand dunes, saltmarsh and lowland open waters and their margins'.	Potential impacts on the scoring species for the Teesmouth and Cleveland Coast SSSI breeding bird assemblage have been considered within this chapter (10.4.13; 10.4.76; 10.4.90; 10.6.125; 10.6.126).
Chapter 10: Paragraph 4.2.23	Natural England	The PEIR states that Fishburn Grassland SSSI is designated for bog. This is not correct, Fishburn Grassland SSSI is designated for its grassland interest.	Potential impacts upon the grassland qualifying feature for Fishburn Grassland SSSI have been considered within this chapter (10.4.25).

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
Chapter 10: Paragraph 4.3.47	Natural England	Non-breeding bird surveys are restricted to September 2025 – March 2026. This is not sufficient because there is significant non-breeding bird interest throughout the whole year.	Non-breeding bird surveys were conducted from November 2025 to April 2026 to account for the Spring passage period. Additional non-breeding bird surveys will be undertaken from August to October 2026 to account for the Autumn passage period that was missed in 2025. The results of these surveys will be provided in November 2026 during the DCO examination period.
Impact assessment – identified impacts			
Chapter 10: Paragraph 6.2	Natural England	Habitat loss/loss of FLL has not been considered within the SSSI assessment despite the quay being within the designated boundary. However, it has been considered within the Ramsar/ SPA. The impact of habitat loss and loss of FLL on SSSI designated features should also be considered.	Potential impacts upon SSSI designated features have been considered within this chapter and the SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))).

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
Chapter 10: Paragraph 6.2.17.2	Natural England	The impact of loss of habitat on terrestrial invertebrates has been considered minor adverse however open mosaic habitats on previously developed land (OMH) across the estuary are likely to be FLL and acting as a metapopulation for the SSSI invertebrate assemblage. Include OMH within assessment of loss of FLL and reassess impacts of construction on terrestrial invertebrates.	Potential impacts upon FLL/FLH for terrestrial invertebrates have been considered within this chapter (10.6.45; 10.6.46).
Impact assessment – mitigation			
Chapter 10: Paragraph 5.1.3	Natural England	The use of the phrase “wherever practicable” on the embedded mitigation suggests that the mitigation is not guaranteed. Ensure that the mitigation is robust and guaranteed in the final ES and avoid using the phrase “wherever practicable”	Embedded mitigation measures for ecological features are described in section 10.5 of this chapter. Additional mitigation measures required to ensure no significant effects for ecological features where embedded mitigation is insufficient are described in sections 10.6 and 10.7 of this chapter. All mitigation measures have been reviewed against good industry practice and professional judgement to ensure they are robust for their respective ecological features. These measures will be secured as part of the Proposed Development.
Chapter 10: Paragraph 5.2.7	Natural England	The list of mitigation measures that “may” be included in the CEMP are measures that need to be included to reduce the adverse risk on the protected features. Include the mitigation measures in the Construction Environmental Management Plan (CEMP).	Mitigation measures addressed by this chapter are included in the Framework CEMP (fCEMP) (Appendix 5A, ES Volume III, Application Document Ref. 6.3).

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
N/A	Environment Agency	The final draft of the outline CEMP (oCEMP) must include appropriate measures pending the outcome of any species-specific assessments and / or recommended mitigation measures that result.	Mitigation measures addressed by this chapter are included in the fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)) .
Impact assessment – conclusions			
Chapter 10: Paragraph 6.2.7	Natural England	Loss of FLL is considered to be a major adverse effect, but only at a county level. Teesmouth and Cleveland Coast SPA/Ramsar is an international site so loss of FLL should be considered at an international level.	The loss of any FLL relating to European sites are considered at an international level in this chapter (10.6.9; 10.6.12).
Other matters – protected species			
Chapter 10: Paragraph 7.2.3	Natural England	“If required, applications will be made for protected species licensing in advance of construction works commencing. Bespoke methodologies will be prescribed within any licence application. Licencing will also prescribe requirements for compensation or features where applicable, such as bat boxes, to address the loss of any breeding/resting, roosting or sheltering feature.” Natural England generally welcome the approach taken to avoid impacts to protected species and note that, at present, no need has been identified by the applicant for any specific Protected Species licences. It is however acknowledged that surveys are ongoing for a number of species and that a District Level Licence (DLL) may be required for great crested newts. Further information on the DLL scheme can be found here. Where further surveys reveal the need for a specific licence from Natural England, we recommend using our Pre-Submission Screening Service, so we can assess a draft licence application and provide a Letter of No Impediment (LoNI), where we consider there to be no reason that a	The desk study and field surveys have not identified any breeding habitat for great crested newts within 250m of the Proposed Development and therefore it has been concluded that a specific licence is not required.

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
		licence would not be granted post DCO consent. The Planning Inspectorate's advice on this can be found here: Advice Note Eleven, Annex C – Natural England and the Planning Inspectorate National Infrastructure Planning under the Wildlife Licencing Sub-heading and within Appendix I. This would be chargeable under the existing Contract between the applicant and Natural England. It should also be noted that Natural England are unable to comment on the need for a licence, this responsibility falls to the developer. Our protected species standing advice can be found here.	
Other matters - BNG			
Chapter 10: Paragraph 7.4.1	Natural England	"Habitat enhancement (on/off site) will be considered within the BNG framework/assessment." Although BNG is not yet a mandatory requirement for NSIPs, we strongly recommend that BNG provision is secured through this development. This will reflect the important role NSIPs must play in delivering the government's environmental targets. The biodiversity baseline should include all land contained within the site's red line boundary and proposals can be iteratively refined over time and throughout detailed design. We encourage developers to: • develop their BNG proposals in adherence with well-established BNG principles • use the latest version of the DEFRA biodiversity metric, adhering to the metric guidance Biodiversity gains should ideally be secured for a minimum of 30 years and be subject to adaptive management and monitoring.	A Framework BNG Plan (Appendix 5.8A to the fLBMES (Application Document Ref. 5.8)) has been submitted alongside this chapter as part of the DCO application. The plan will follow the latest BNG guidance, principles and standards for NSIPs. In summary, the Proposed Development has not committed to the BNG objective of 10% (as the application is being submitted ahead of the mandatory BNG requirement being in place for NSIPs) however, it aims to provide an appropriate level of habitat compensation for any losses and maximise additional opportunities for biodiversity. Adhering to mitigation principles, the Proposed Development's objective is to create habitat as close as possible to the baseline habitats lost, and

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
		BNG plans should be secured by a suitably worded requirement in the DCO.	achieve a NNL in baseline Biodiversity Units. In accordance with latest government guidance, the BNG baseline will be calculated across an area referred to as the “BNG boundary”, which may differ from the Order limits. The BNG boundary must include all habitats within the Order limits that are expected to be negatively impacted by the development, together with any additional habitats within the Order limits that will be used to contribute towards the development’s NNL. Habitats that will remain unimpacted may be excluded where the project ecologist confirms that no permanent or temporary loss, or deterioration in condition, is expected are used to contribute towards the voluntary approach to NNL using the Defra BNG metric (Ref 30, Ref 31, Ref 32).
Other matters – project parameters			
Chapter 10: Paragraph 5.2.4	Natural England	The PEIR assesses water quality impacts based on water being discharged through a proposed Long Sea Outfall (LSO). The LSO may not be completed by the time the development is operational. The assessment will underestimate impacts if treated water is discharged from Bran Sands. This issue is recognised in section 6.3.7, but without any	An assessment of water quality impacts is provided in Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1) .

Statutory consultation ID (PEIR Reference)	Consultee	Comment	Applicant response
		detailed analysis it is not possible to establish whether adequate mitigation is feasible. Provide an assessment of water quality impacts that does not assume availability of a Long Sea Outfall.	
N/A	Durham County Council	The site lies outside of County Durham and given the distances direct or indirect impacts within County Durham are not expected. The site lies within the Teesmouth and Cleveland SPA, part of which lies in County Durham, the PEIR recognises the designation and the requirement for a HRA. Durham County Council is not the "competent authority" with regards to the European designated site in this case, this responsibility lies with Stockton-on-Tees and Redcar and Cleveland Borough Councils.	All impacts on international designated sites are considered with the Report to Inform HRA (Application Document Ref. 5.11) .

Table 10.4 Targeted consultation responses relevant to Terrestrial Ecology

Response reference/PEIR reference	Consultee	Comment	Applicant response
2.2.8 and 4.1.2	Environment Agency	"Open cut methods for cabling or pipelines can have significant negative impacts on watercourses, affecting geomorphological processes, increased erosion of the banks and bed, unconsolidated gravels can be washed out. Open cut methods can also destroy habitats (both riparian and terrestrial), including those of protected species such as the water vole. Installation of cables or pipelines can also prevent free movement of mammals along the river corridor." Where possible, trenches should be excavated and closed in the same day to prevent any wildlife becoming trapped. If it is necessary to leave a trench open overnight then it should be sealed with a close-fitting plywood	Mitigation measures for the construction phase, including open cut methods, are included in the fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3) .

Response reference/PEIR reference	Consultee	Comment	Applicant response
		cover or a means of escape should be provided in the form of a shallow sloping earth ramp, sloped board or plank. Any open pipework should be capped overnight. All open trenches and pipework should be inspected at the start of each working day to ensure no animal is trapped.	
2	Natural England	Natural England would like to highlight the comments provided in our previous response letter to the PEIR consultation, dated 13 January 2026. The comments provided in our previous response should be considered to equally apply to the current submitted addendum to the PEIR.	Previous comments are addressed in Table 10.3.
2.1	Natural England	Based on the submitted PEIR documents, there are several impact pathways that are relying on further surveys and/or assessment to establish the magnitude of the impact on the natural environment and particularly the Teesmouth and Cleveland Coast Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI). Natural England encourages your team to seek early engagement with us to ensure any issues can be addressed and potentially resolved in advance of the DCO application. We refer you to section 1.5 of our previous response which highlights the broad impact pathways and section 1.6 that sets out the assessment of impacts to the designated sites. We want to highlight the impact pathways of Air Quality and Water Quality due to the complexity of the context.	Field surveys have been completed for the Proposed Development to inform the assessment of potential impacts and likely significant effects (see Appendix 10A to 10F (ES Volume III, Application Document Ref. 6.3)). Potential impacts and likely significant effects as result of the Proposed Development on designated sites are detailed in the Report to Inform HRA (Application Document Ref. 5.11) and SSSI Assessment (ES Volume III, Application Document Ref. 6.3) .
2.2	Natural England	Section 4.3.7 states that the assessment will use the same methods as agreed through the EIA scoping. Natural England has provided advice on this method, particularly the need for sound contour mapping and an increased survey and assessment buffer of 500 meters (see response ref: 535169, dated: 13 January 2026, A4.1, A4.4, A4.8 & A4.9). We recommend our previous provided advice is used to inform the assessment of noise impacts in the Environment Statements, SSSI impact assessment and HRA.	An assessment of noise on ecological features is provided in (Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3).

Zone of influence

- 10.3.8 The Site covers a total area of 190.79 hectares (ha), which includes the 'Main Site' as well as the 'Wider Site', temporary compounds and working areas required to undertake the Proposed Development.
- 10.3.9 The Zol for the Site, with regard to terrestrial ecology, is defined as the area in which impacts arising from construction, operation and/or decommissioning could lead to significant effects for ecological features. For the purpose of this assessment, it is necessary to apply Zols of varying sizes depending on the ecological feature/feature under assessment and, in most cases, these will extend beyond the Site.
- 10.3.10 Zol have been defined based on current good industry practice guidelines and information regarding the Site which can be found in **Chapter 3: Site and Surrounding Area (ES Volume I, Application Document Ref. 6.1)**.
- 10.3.11 A summary of the Zol for each feature relevant to the terrestrial ecology assessment for the Site is set out in Table 10.5. The Zol have been reviewed following statutory consultation to ensure adequate assessment.

Table 10.5 Terrestrial Biodiversity zones of influence

Feature	Zone of Influence (Inclusive of the Site)
Statutory designated sites of international importance.	Within 20km of the Site (Extending to 30km where bats are a qualifying feature of the designated site).
Statutory designated sites of national and local importance.	Within 20km of the Site (SSSI). Within 5km of the Site (National Nature Reserve (NNR)).
Non-statutory designated sites.	Within 2km of the Site.
HoPI and woodland listed on the Ancient Woodland Index (AWI).	Within 2km of the Site.
Historic EPS licences granted.	Within 2km of the Site.
Mapped waterbodies and watercourses.	Within 250m of the Site.
Habitats (all).	Within 250m of the Site.
Protected and notable species.	Various (Refer to Table 10.7)

Assessment methodology

- 10.3.12 The assessment methodology is common across all elements of the Proposed Development both during construction and operation and has been undertaken in accordance with the CIEEM EcIA guidelines [Ref 21].

These guidelines represent the current best practice for assessing the ecological impact of development projects.

- 10.3.13 Consideration will also be given to standard EIA terminology, where the significance level attributed to each effect has been assessed based on the sensitivity of the affected Important Ecological Feature (IEF) and the magnitude of change arising from the Proposed Development. The sensitivity of the affected ecological feature is assessed on a scale of very high, high, medium, low, and negligible and the magnitude of change is assessed on a scale of large, medium, small, negligible and no change.
- 10.3.14 The assessment of likely significant environmental effects as a result of the Proposed Development will consider the construction, operation and decommissioning phases.
- 10.3.15 The impact process involves:
- identifying and characterising impacts and their effects;
 - incorporating measures to avoid and mitigate adverse effects;
 - assessing the significance of any residual effects after embedded mitigation;
 - identifying appropriate additional mitigation measures and any compensation measures to offset significant residual effects; and
 - identifying opportunities for ecological enhancement.
- 10.3.16 The assessment includes potential impacts on each ecological feature identified as an IEF (discussed further under 'Determining Importance', below), identifying potential impacts and effects during the construction, operational and decommissioning phases of the project, with impacts and effects characterised in accordance with the following criteria:
- **Positive or negative** – whether the impact/effect will improve or reduce the quality of the baseline habitat present;
 - **Extent** – the spatial or geographical area over which the impact/effect may occur,
 - **Magnitude** – the size, amount, intensity or volume of the impact/effect, defined on a quantifiable basis, such as an area or percentage of habitat to be lost;
 - **Duration** – the length of time an impact/effect is expected to last, relative to the particular timeframe for the species/habitat being considered and defined as short, medium or long-term and permanent

or temporary. Short-term is considered to be up to one year; medium-term is considered to be between one and 10 years and long-term is considered to be greater than 10 years;

- **Frequency and timing** – the frequency of a particular activity may change its impact/effect (e.g., one-off or infrequent disturbance is less likely significantly affect a particular species present within a habitat, whereas regular disturbance is more likely to have a significant effect). Similarly, the impact/effect of a particular activity may change significantly depending on its timing (e.g., tree felling outside of bird nesting season is highly unlikely to directly impact nesting birds, whereas carrying out the same work within nesting season is more likely to have impacts); and
- **Reversibility** – an irreversible (permanent) effect is one from which recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it. A reversible (temporary) effect is one from which spontaneous recovery is possible or which may be counteracted by mitigation.

Determining importance

- 10.3.17 A number of characteristics contribute to the importance of ecological features. These include, for example (but not exclusively):
- the rarity of a species or habitat;
 - legal protection/conservation status;
 - ability to resist or recover from environmental change;
 - whether the species population size is notable in a wider context;
 - the richness of assemblages of plants and animals; and
 - the presence of species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.
- 10.3.18 The CIEEM guidelines [Ref 21] state that ecological features should be considered within a 'defined geographical context' (i.e. spatial scale), with International importance being the highest level, followed by International and European; National; Regional; Metropolitan, County, vice-county or other local authority-wide areas; River Basin District; Estuarine system/Coastal cell; and Local importance representing the lowest level.

10.3.19 Assigning importance to ecological features is based on professional judgement informed by available guidance, information and expert advice. Refer to Table 10.6 for the criteria used in this chapter.

Table 10.6 Classification of important ecological features

Importance	Criteria examples
International	- a site forming part of the National Site Network, as designated by the Habitats Regulations (SAC), Birds Regulations (SPA), or a site meeting criteria for international designation (Ramsar); and - species present in internationally important numbers (>1% of biogeographic population).
National (England/UK)	- a nationally designated site (SSSI or NNR), or sites meeting the criteria for national designation; - species present in nationally important numbers (>1% of national population); - viable areas of priority habitat listed on Annex I of the Habitats Directive (92/43/EEC) and smaller areas of such habitat that is essential to maintain the viability of that ecological resource; and - areas of ancient semi-natural woodland.
Regional (North East England, Tees Valley Combined Authority)	- regionally significant and viable areas of key habitat identified as being of regional value; and - species present in regionally important numbers (e.g. 0.5% of national population).
Borough (Stockton-on-Tees Borough, Redcar and Cleveland Borough)	- LNR; - habitat areas identified as being important at the borough scale (e.g. those identified by the Tees Valley BAP); - non-statutory designated sites (e.g. LWS); and - species present in populations considered to be important at the borough scale (e.g. those identified by the Tees Valley BAP or 0.1% of national population).
Local	- non-statutory designated sites (e.g. LWS); and - areas of habitat or species considered to appreciably enrich the ecological resource within a local context (e.g. species-rich flushes or hedgerows).

Significance of effect criteria

10.3.20 In determining the significance of a potential effect, the magnitude of change arising from the Proposed Development is correlated with the value/sensitivity of the particular environmental feature or process under consideration. The sensitivity of effect criteria will align with CIEEM's Guidelines on EcIA [Ref 21].

- 10.3.21 Effects will be defined as either ‘significant’ or ‘not significant’. Effects that are classified as moderate or above are ‘significant’. Effects classified as below moderate are considered ‘not significant’.

Desk study

- 10.3.22 A desk study has been completed for the Site and wider Zol following good industry practice guidelines. The desk study has included a review of publicly available resources and databases to determine the presence of protected sites, HPI (as defined by the NERC Act [Ref 4]), ancient/veteran trees listed on the Ancient Tree Inventory (ATI), and woodland listed on the AWI. The search radii are outlined in Table 10.5, above.
- 10.3.23 Sources of information used to inform the desk study include:
- Multi-Agency Geographic Information for the Countryside (MAGIC) [Ref 33];
 - Environmental Records Information Centre for the North East of England (ERIC NE) [Ref 34];
 - British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) data [Ref 35]; and
 - INCA [Ref 36].
- 10.3.24 INCA were consulted with as part of the desk study to determine the likely presence of ecological features within the Site. INCA has local expertise and knowledge from conducting ecological studies across the Tees Valley area, including the Site, since 1989. This local knowledge and their own historical data has been utilised to provide further context to other information collected during the desk study regarding terrestrial ecological features.

Field survey

- 10.3.25 Table 10.7 below, details relevant survey buffers (i.e. Zol) from the Site for the ecological features (habitats, species and species groups) mentioned above, along with relevant methodology and current good practice guidelines applied.
- 10.3.26 Incidental field data for ecological features was collected across the Main Site by Arup ecologists whilst acting as Ecological Clerk of Works (ECoW) during ground investigations from 19 February 2026 to 11 May 2026 and have been used to supplement the ecological baseline.

Table 10.7 Field survey buffer, methodology and guidance for ecological features

Ecological feature	Survey buffer (Zol) beyond the Site	Survey methodology	Guidance
Habitats and INNS	25m	A UK Habitat classification (UKHab) and condition assessment survey was carried out within the Site to identify and map all the habitats present. INNS will be identified as part of the UKHab survey and Condition Assessment.	UKHab (2023). The UK Habitat Classification Version 2.0. [Ref 37] UK Gov (2025). Statutory Biodiversity Metric Condition Assessments. [Ref 38]
Amphibians	250m	A Habitat Suitability Index (HSI) assessment of all areas of standing water in the Site and waterbodies within 250m of the Site (those which are not separated by barriers such as roads and watercourses) was completed to determine their suitability for great crested newts. None of the waterbodies identified had average or above suitability for great crested newt so no further surveys were undertaken. It was not possible to undertake environmental DNA (eDNA) surveys of the two waterbodies identified within the Main Site as they dried up in April 2025.	Langton et al. (2001), Great Crested Newt Conservation Handbook. [Ref 39] Oldham et al. (2000). Evaluating the suitability of habitat for the Great Crested Newt. [Ref 40] Biggs J. et al. (2014). Technical advice note for field and laboratory sampling of great crested newt. [Ref 41]
Badger	50m	During the PEA, all suitable areas of habitat within the Zol was searched for badger signs including setts, latrines, feeding areas, tracks, and push-through points. The PEA determined that the habitats within 50m of the Site are not suitable habitats for badger and no field signs were recorded. Therefore, no further surveys were undertaken.	Harris et al. (1989). Surveying Badgers. [Ref 42] Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Version 1. [Ref 43]
Bats	30m	Ground Level Tree Assessment (GLTA) and Preliminary Bat Roost Assessments (PBRA) were undertaken during the PEA to identify features that bats could use for roosting (Potential Roost Features (PRF)) which are due to be impacted by the proposed works. The survey classified the trees and structures identified within the Zol as having no suitability for bats (none). Automated static bat detectors were deployed for five consecutive nights per month (April to October 2025) in suitable weather conditions. Bat activity was	Collins, J. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition) (Ref 44)

Ecological feature	Survey buffer (Zo) beyond the Site	Survey methodology	Guidance
		recorded remotely, and analysed to provide a measure of species richness, relative abundance, and importance of different landscape features to bats. To supplement the static detector deployment, one Night-time Bat Walkover (NBW) survey visit was undertaken per season (Spring – April/May, Summer - June/July/August, Autumn – September/October). During the NBW surveys the number of bats, number of species and bat behaviour was recorded using a bat detector.	
Breeding Birds	250m	A suite of seven breeding bird survey visits between March and July 2025 have been undertaken following the current best practice standards. Records of birds in the field were plotted onto maps and territory mapping was used to estimate the number and distribution of breeding bird territories across the Site.	Bird Survey Guidelines for assessing ecological impacts [Ref 45] Marchant (1983) Common Bird Census (CBC) Instructions [Ref 46] Bibby, C.J. (2000) Bird Census Techniques [Ref 47]
Wintering Birds	250m to 500m	A suite of wintering bird surveys was undertaken between September 2025 and April 2026 following the current best practice standards. The surveys involved bi-monthly, diurnal visits at high and low tide each month. Surveys are conducted during the two-hour window either side of the peak tide. One nocturnal survey, in March 2026, was incorporated into the Wintering bird survey efforts, with the use of NVAs where required to aid vision. During the surveys the species, location, number and behaviour of birds was recorded.	Bird Survey Guidelines for assessing ecological impacts [Ref 45] BTO's WeBS methodology [Ref 47] Gilbert et al. (1998). Bird Monitoring Methods [Ref 48]
Otter and Water Vole	100m	All open watercourses and waterbodies within the Site and 100m upstream and downstream of the Site were screened for their suitability for otter (<i>Lutra lutra</i>) and water vole (<i>Arvicola amphibius</i>) via consultation with INCA (field surveyors). Those watercourses and waterbodies determined to be suitable were then searched for signs of otter and water vole. Two dedicated surveys to confirm the presence, or inform the likely absence, of	Chanin P (2003). Monitoring the Otter [Ref 49] Findlay, M.A., and White, P.J.C. (2026). The Otter Field Survey and Monitoring Handbook [Ref 50] Strachan et al. (2011). Water Vole Conservation Handbook [Ref 51]

Ecological feature	Survey buffer (Zo) beyond the Site	Survey methodology	Guidance
		otter and water vole, were undertaken from May to July 2026. Areas of suitable habitat were searched for otter signs (e.g. spraints, food remains, footprints or paths, holts or couches) and water vole signs (e.g. latrines, feeding stations, burrows, and footprints).	Dean et al. (2016). The Water Vole Mitigation Handbook [Ref 52]
Terrestrial invertebrates	Site	Invertebrate surveys were undertaken from May to July 2025 in accordance with best practice guidance to appraise the key habitats and/or features of the Site through the recording of invertebrates. The purpose of these surveys was to assess the value to invertebrates of those habitats or features in order to evaluate the Site for its importance as an invertebrate resource.	Drake et al. (2007). Surveying Terrestrial and Freshwater Invertebrates for Conservation Evaluation [Ref 53] Jukes, A (2021). Considering Invertebrates in Preliminary Ecological Appraisals [Ref 54]

Potentially significant effects

10.3.27 The following effects are considered to be potentially significant and have been considered further in this assessment:

Construction phase

- habitat loss or fragmentation;
- loss of FLL;
- killing or injury of protected and/or notable species;
- air pollution;
- water pollution;
- disturbance from artificial lighting;
- noise disturbance; and
- vibration disturbance.

Operational phase

- air pollution;
- water pollution;
- disturbance from artificial lighting;
- noise disturbance;

- vibration disturbance; and
- visual disturbance.

[Sensitive ecological features](#)

10.3.28 The following sensitive ecological features will be considered as part of the terrestrial ecology assessment.

Designated sites

Statutory designated sites

- Teesmouth and Cleveland Coast Ramsar;
- Teesmouth and Cleveland Coast SPA;
- North York Moors SPA;
- Northumbria Coast SPA;
- North York Moors SAC;
- Durham Coast SAC;
- Castle Eden Dene SAC
- Teesmouth and Cleveland Coast SSSI;
- Lovell Hill Pond SSSI;
- Saltburn Gill SSSI;
- Briarcroft Pasture SSSI;
- Roseberry Topping SSSI;
- North York Moors SSSI;
- Whitton Bridge Pasture SSSI;
- Langbaugh Ridge SSSI;
- Cliff Ridge SSSI;
- Durham Coast SSSI;
- Hart Bog SSSI;
- Pike Whin Bog SSSI;
- Kildale Hall SSSI;
- Hulam Fen SSSI;

- Castle Eden Dene SSSI;
- Pinkney and Gerrick SSSI;
- Fishburn Grassland SSSI;
- Charity Land SSSI;
- Newton Ketton Meadow SSSI;
- Boulby Quarries SSSI;
- Teesmouth NNR; and
- Durham Coast NNR.

Non-statutory designated sites

- Eston Pumping Station LWS;
- Coatham Marsh LWS;
- Greatham Creek North Bank Saltmarsh LWS;
- Greenabella Marsh LWS;
- Saltern Saltmarsh LWS; and
- Zinc Works Bird Field LWS;

Habitats

Habitats of principal importance

- OMH (Open Mosaic Habitat);
- Coastal and Floodplain Grazing Marsh;
- Coastal Saltmarsh;
- Mudflats;
- Deciduous Woodland;
- Saline Lagoons; and
- Lowland Fens.

Other habitats

- ancient woodland; and
- habitats recorded within the Site during the UKHab survey.

Protected and notable species

- amphibians;
- badger;
- bats;
- bird species – breeding and wintering;
- otter;
- water vole;
- other notable terrestrial mammal species (e.g. West European hedgehog and brown hare (*Lepus europaeus*));
- terrestrial invertebrates;
- reptiles; and
- INNS.

Assumptions and limitations

- 10.3.29 There are no significant overall limitations that are considered to compromise the validity of this chapter, although details of any qualifications or limitations that are specifically relevant to a particular floral or faunal survey are provided in the relevant appendices (**Appendices 10A to 10F (ES Volume III, Application Document Ref. 6.3)**). Where update surveys are required to inform mitigation licence requirements, this is specified within the **fLBMES (Application Document Ref. 5.8)**.
- 10.3.30 Due to land access restrictions, the scope of several floral and faunal surveys performed to inform this chapter have been limited in their extent (approx. 23.96 ha). These areas are shown in **Figure 10.1: Field Survey Data Gaps (ES Volume II, Application Document Ref. 6.2)** and include:
- SABIC Land South of the Main Site – refers to the proposed electrical cable connection area located on land between Huntsman Drive and the southern boundary of the Main Site;
 - Linkline Corridor North Tees – the access roads and pipeline corridor running from Seaton Carew Road along the southern boundary of the Main Site;
 - Linkline Corridor Dabholm Gut – the area north of Dabholm Gut from the River Tees frontage to Bran Sands wastewater treatment works (WwTW); and

- Linkline Corridor Wilton Roadway – private road from the Linkline Corridor south of Bran Sands WWTW to the access to the Wilton International site off Steel House Roundabout on the A1085 Trunk Road.
- 10.3.31 Due to access issues in conducting passage bird surveys there are some months with missing data. In the absence of data for these months, assumptions have been made regarding a reasonable worst-case scenario for bird usage in these areas. Additional passage bird surveys are being undertaken in autumn 2026 covering the accessible survey areas. The confirmatory results of these surveys will be made available once complete to validate the assumptions and conclusions made in this report.
- 10.3.32 As an alternative to sourcing primary data through field surveys for these areas, secondary data sources have been relied upon to provide historical context and therefore inform assumptions regarding the ecological features likely to be present. The secondary data sources include:
- Records obtained from ERIC NE;
 - Satellite imagery (e.g. Google Earth);
 - Photogrammetry data from drone surveys of the Main Site;
 - Information and results from field surveys carried out in 2023 and 2024 which informed the PEIR [Ref 55]; and
 - Publicly accessible ecological data from recent planning applications that overlap the Site, sourced from LPA planning portals [Ref 56, Ref 57, Ref 58] and PINS website [Ref 59, Ref 60].
- 10.3.33 The Applicant's position is that the current level of survey effort undertaken to date, supplemented by these secondary data sources, is adequate to support the ES and HRA for the Proposed Development and that there are no significant data gaps in the baseline assessment.
- 10.3.34 The exact route of utilities and pipelines in the Wider Site as well as the layout of the Proposed Development within the Main Site will be determined at detailed design stage. For the purposes of the ES, a reasonable worst-case scenario has been assumed to inform this chapter's impact assessment and mitigation requirements. The worst-case scenario assumes all proposed utilities and pipeline routes will be constructed and the Main Site, including the jetties and intertidal foreshore, will be completely cleared, levelled and prepared for the construction of the Proposed Development, as specified in **Chapter 4: Proposed Development** and **Chapter 5: Construction Programme and Management (ES Volume I, Application Document Ref. 6.1)**.

- 10.3.35 All construction laydown areas including storage, site offices, welfare facilities and car parking will also be cleared, levelled and prepared. These areas will be utilised throughout the construction phase until their removal at the end of the phase. With the exception of the area located north of Seal Sands Road where baseline habitats are expected to be permanently lost, habitats within the other construction laydown areas will be temporarily lost or damaged during construction and will be mitigated for within the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** and compensated for in line with the **fLBMES (Application Document Ref. 5.8)**. Associated requirements for the protection of retained vegetation (e.g. during vehicle movements and construction/re-instatement works), vegetation restoration, soil protection and handling, and temporary soil storage are specified in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.
- 10.3.36 It is assumed that eventual decommissioning activities will involve the removal of above ground infrastructure only and will primarily be located within the built footprint of the Proposed Development (i.e. Main Site) rather than within areas of vegetation.

10.4 Baseline conditions

Overview

- 10.4.1 The baseline conditions for the terrestrial ecology assessment have been defined through a full desk study, PEA and a series of field surveys. The data sources referred to in Section 10.3 have also been consulted to inform the baseline review.
- 10.4.2 A PEA has been completed for the Site in April 2025 and May 2026, with the exception of areas illustrated in **Figure 10.1: Field Survey Data Gaps (ES Volume II, Application Document Ref. 6.2)**.
- 10.4.3 The Site consists of various former and current industrial facilities and associated access roads as well as various semi-natural habitats, including grasslands, wetlands, broadleaved woodlands, sparsely vegetated land, scrub, intertidal habitat and OMH. The habitat types present, typically offer limited biodiversity value due to them being regularly disturbed, however, those undisturbed areas can offer opportunities for protected and notable UK wildlife to shelter, forage or breed.
- 10.4.4 As mentioned in Section 10.1, this assessment does not duplicate information set out in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)** which includes baseline information for that assessment.

Current baseline

10.4.5 A full desk study has been carried out to inform the baseline. The results are summarised below.

Designated sites

International statutory designated sites

10.4.6 International statutory designated sites in the vicinity of the Site are shown on **Figure 10.2: International Statutory Designated Sites within 15km (ES Volume II, Application Document Ref. 6.2)** and are listed in Table 10.8.

Table 10.8 International statutory designated sites within 15km of the Site.

Designated Site	Distance and direction from the Site	Reason for designation
Teesmouth and Cleveland Coast SPA	Within Site (12.72 ha, 0.10% of designation)	The site qualifies under Article 4 of the Birds Directive (2009/147/EC) for the following reasons: • The site regularly supports more than 1% of the Great Britain populations of five species listed in Annex I of the Birds Directive (2009/147/EC): ○ Pied avocet (<i>Recurvirostra avosetta</i>); ○ Sandwich tern (<i>Thalasseus sandvicensis</i>); ○ Common tern (<i>Sterna hirundo</i>); ○ Little tern (<i>Sternula albifrons</i>); and ○ Ruff (<i>Calidris pugnax</i>). • The site regularly supports more than 1% of the biogeographic population of two regularly occurring migratory species not listed in Annex I of the Birds Directive (2009/147/EC); ○ Red knot (<i>Calidris canutus</i>); and ○ Common redshank (<i>Tringa totanus</i>). • The site qualifies under Article 4 of the Birds Directive (2009/147/EC) as it used regularly by over 20,000 waterfowl (waterfowl as defined by the Ramsar Convention) or 20,000 seabirds in any season. • The waterfowl/seabird assemblage includes a wide range of breeding, wintering and passage species including those of European importance described above as well as 1% of the Great Britain non-breeding populations of: ○ Gadwall (<i>Mareca strepera</i>); ○ Northern shoveler (<i>Spatula clypeata</i>); and ○ Sanderling (<i>Calidris alba</i>).

Designated Site	Distance and direction from the Site	Reason for designation
		- The following species are major components of the waterfowl/seabird assemblage as their numbers exceed 2,000 individuals: - Eurasian wigeon (<i>Mareca penelope</i>); - Northern lapwing (<i>Vanellus vanellus</i>); - Herring gull (<i>Larus argentatus</i>); and - Black-headed gull (<i>Chroicocephalus ridibundus</i>).
Teesmouth and Cleveland Coast Ramsar	Adjacent to Site	Teesmouth and Cleveland Coast Ramsar site is designated as a wetland of international importance because: - The site qualifies under Ramsar criterion 5 as it is regularly used by over 20,000 waterbirds in any season; - The site qualifies under criterion 6 as it is regularly used by 1% or more of the biogeographic populations of the following bird species in any season: - Red knot; - Common redshank; and - Sandwich tern.
North York Moors SPA	10.00km south	The site qualifies under article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain population of two species listed in Annex I of the Birds Directive (2009/147/EC) in any season: - Merlin (<i>Falco columbarius</i>); and - European golden plover (<i>Pluvialis apricaria</i>).
North York Moors SAC	10.00km south	The site is designated under article 4(4) of the Habitats Directive (92/43/EEC) as it hosts the following habitats listed in Annex I of the Habitats Directive (92/43/EEC): - Blanket bogs (*if active bog) * Priority feature; - European dry heaths; and - Northern Atlantic wet heaths with <i>Erica tetralix</i>. (Wet heathland with cross-leaved heath).
Northumbria Coast SPA	13.49km north	The site qualifies under Article 4 of the Birds Directive (2009/147/EC) for the following reasons: - The site regularly supports more than 1% of the GB populations of two species listed in Annex I of the Birds Directive (2009/147/EC): - Arctic tern (<i>Sterna paradisaea</i>); and - Little tern. - The site regularly supports more than 1% of the biogeographical population of two regularly

Designated Site	Distance and direction from the Site	Reason for designation
		occurring migratory species not listed in Annex I of the Birds Directive (2009/147/EC): ○ Turnstone (<i>Arenaria interpres</i>); and ○ Purple sandpiper (<i>Calidris maritima</i>).
Northumbria Coast Ramsar	13.49km north west	The site supports internationally important wintering populations of turnstone and purple sandpiper.
Durham Coast SAC	13.49km north west	The site is designated under article 4(4) of the Habitats Directive (92/43/EEC) as it hosts the following habitats listed in Annex I of the Habitats Directive (92/43/EEC): • Vegetated sea cliffs of the Atlantic and Baltic coasts
Castle Eden Dene SAC	16.85km north west	The site is designated under article 4(4) of the Habitats Directive (92/43/EEC) as it hosts the following habitats listed in Annex I: • <i>Taxus baccata</i> woods of the British Isles. (Yew-dominated woodland).

- 10.4.7 There are no proposed Ramsar Sites or potential SPAs within 15km of the Site.
- 10.4.8 There are no international designated sites with bats as a qualifying feature within 30km of the Site.
- 10.4.9 Due to their proximity to the Site, Teesmouth and Cleveland Coast SPA and Ramsar are scoped in to this assessment for potential impact pathways during construction and operation.
- 10.4.10 Castle Eden SAC is potentially within the Zol for air pollution impact pathways, as requested by Natural England, and therefore has been scoped in for operation.
- 10.4.11 All other international sites identified within 15km are potentially within the Zol for air pollution impact pathways during operation only so have been scoped in for operation only.

National statutory designated sites

- 10.4.12 All national statutory designated sites are displayed on **Figure 10.3: National Statutory Designated Sites within 20km (ES Volume II, Application Document Ref. 6.2)** and are listed in Table 10.9.

Table 10.9 National statutory designated sites within 20km of the Site.

Designated Site	Distance and direction from the Site	Reason for designation
Teesmouth and Cleveland Coast SSSI	Within Site (12.72 ha, 0.42% of designation)	The Teesmouth and Cleveland Coast SSSI is of special interest for the following nationally important features that occur within and are supported by the wider mosaic of coastal and freshwater habitats: • Jurassic geology; • Quaternary geology; • Sand dunes; • Saltmarshes; • Breeding harbour seals (<i>Phoca vitulina</i>); • Breeding pied avocet, little tern and common tern; • A diverse assemblage of breeding birds of sand dunes, saltmarsh and lowland open waters and their margins; • Non-breeding shelduck (<i>Tadorna tadorna</i>), shoveler, gadwall, ringed plover (<i>Charadrius hiaticula</i>), red knot, ruff, sanderling, purple sandpiper, common redshank and sandwich tern; • An assemblage of more than 20,000 waterbirds during the non-breeding season; and • A diverse assemblage of invertebrates associated with sand dunes.
Teesmouth NNR	543m north-west	The Teesmouth NNR is designated for: • Tees Lowlands National Character Area (NCA) feature; • Sand dune plant assemblages; • Saltmarsh plant assemblages; • Harbour seal; • Pied avocet (breeding); • Little tern (breeding); • BAP breeding birds; including waders, grey partridge (<i>Perdix perdix</i>), skylark (<i>Alauda arvensis</i>), linnet (<i>Linaria cannabina</i>), and reed bunting (<i>Emberiza schoeniclus</i>); • Sandwich tern (post-breeding); • Sanderling (non-breeding); • Red knot (non-breeding); • Common redshank (non-breeding); • Shelduck (non-breeding); • An assemblage of more than 20,000 waterbirds during the non-breeding season; • Invertebrate assemblages; and • Lyme grass moth (<i>Photedes elymi</i>).

Designated Site	Distance and direction from the Site	Reason for designation
Lovell Hill Pools SSSI	4.92km south east	Lovell Hill Pools is set within an undulating, well-wooded agricultural landscape to the north of the North York Moors. The site supports an outstanding assemblage of dragonflies and damselflies as well as populations of both great crested newt and smooth newt (<i>Lissotriton vulgaris</i>).
Saltburn Gill SSSI	9.68km east	Saltburn Gill is a steep sided coastal dene, incised into glacial clays, shales and sandstones of the Lower Jurassic period. The site comprises the eastern slopes of the gill which are of particular importance in supporting one of the few relatively undisturbed areas of mixed deciduous woodland in Cleveland.
Braircroft Pasture SSSI	11.76km south west	Baircroft Pasture is nationally important for its area of species rich unimproved neutral grassland. The relatively level site sits adjacent to a stream and overlays glacial tills and sands resulting in majority of the grassland to be characterised by a more acidic <i>Danthonia decumbens</i>, heath-grass, sub-community. The species-rich grassland exists in a mosaic with moist tussocky stands of the <i>Holcus lanatus</i> -, Yorkshire fog - tufted hair-grass community. This site is one of two remaining examples of this habitat in the Natural Area.
Roseberry Topping SSSI	9.97km south	Roseberry Topping is a nationally important palaeobotanical site. The site is known for its middle Jurassic plant bed dating back 170 million years ago, which has yielded fossils from seventy plant species.
North York Moors SSSI	10.01km south	The North York Moors contain the largest continuous tract of heather moorland in England and as such hold national importance for its mire and heather moorland vegetation communities. The site also holds international importance for its breeding bird populations, particularly merlin and golden plover. The vegetation displays a transition between blanket bog and dry heath land and supports diverse and extensive upland plant communities. The site supports a nationally important assemblage of moorland breeding birds including • Merlin; • Golden plover; • Snipe (<i>Gallinago gallinago</i>); • Curlew; • Common redshank; • Whinchat (<i>Saxicola rubetra</i>); • Ring ouzel (<i>Turdus torquatus</i>); • Hen harrier (<i>Circus cyaneus</i>);

Designated Site	Distance and direction from the Site	Reason for designation
		• Peregrine (<i>Falco peregrinus</i>); and • Short-eared owl (<i>Asio flammeus</i>).
Whitton Bridge Pasture SSSI	12.05km west	Whitton Bridge Pasture is nationally important for its areas of species-rich unimproved neutral grassland. The gently sloping site sits adjacent to a stream and is situated on glacial tills and sands, contributing to most of the grassland to be characterised as the more acidic heath-grass (<i>Danthonia decumbens</i>) sub-community. The species-rich grasslands occupy a continuous belt which grades into a community dominated by coarser false oat-grass (<i>Arrhenatherum elatius</i>) swards on alluvial soils on the northern edge.
Langbaugh Ridge SSSI	10.04km south	Langbaugh Ridge is identified as of national importance in the Geological Conservation Review as the best known and furthest travelled member of an unusually persistent dyke swarm.
Cliff Ridge SSSI	10.84km south	Cliff Ridge is identified as of national importance in the Geological Conservation Review. Through small exposures in the upper quarries of Cliff Ridge a full cross-section of Cleveland Dyke can be seen, showing where the dyke encounters thermally altered metamorphosed sediments.
Durham Coast SSSI	11.92km north	The Durham Coast is of considerable biological, geological and physiographic interest. The site contains most of the paramaritime Magnesian Limestone vegetation in Britain, as well as supporting a species-rich dune system, and nationally important numbers of Wintering shore birds and breeding little terns which contribute to the internationally important populations of the north east coast. The paramaritime Magnesian Limestone vegetation consists of a mix of plants unique from the other lowland areas of the Magnesian Limestone grassland found in County Durham. The site supports nationally important numbers of wintering birds including; • Purple sandpiper; • Sanderling; • Red knot; and • Turnstone. In addition to Marsden Bay having an established seabird colony of kittiwake (<i>Rissa tridactyla</i>), fulmar (<i>Fulmarus glacialis</i>) and cormorant (<i>Phalacrocorax carbo</i>). The coast is also entomologically rich, supporting colonies of the Durham Argus butterfly (<i>Aricia artaxerxes salmacis</i>) and the least minor moth (<i>Photedes captiuncula</i>).

Designated Site	Distance and direction from the Site	Reason for designation
Hart Bog SSSI	12.91km north west	Hart Bog is of particular botanical, invertebrate and palaeobotanical interest. The site consists of a small topogenous mire sitting within a steep-sided hollow cut into glacial clays of a morainic mound. There is no inflow or outflow to the mire and whilst its core is relatively dry, composed of consolidated peat, the surrounding mire edge 'lagg' of semi-floating vegetation is exceedingly wet and 'quakes' in places. Four distinct types of plant community are identifiable; a bog mosses, species-poor fen, species-rich fen and scrub. Hart Bog is of invertebrate interest and supports one nationally rare species of water beetle and three locally rare species of harvestmen.
Pike Whin Bog SSSI	13.47km north west	Pike Whin Bog is one of the few surviving wetlands in the lowlands of East Durham. The bog lies in a natural basin, in which the water level is at or above the ground surface for most of the year. Over majority of the site species-poor sedge fen has developed however among the sedge there is a small area dominated by great willow-herb (<i>Epilobium hirsutum</i>) and a stand of grey willow (<i>Salix cinerea</i>) scrub. Grassland dominated by tufted hair grass (<i>Deschampsia cespitosa</i>) sits at the margin of the site. Due to the scarcity of wetland sites in East Durham, many of the species which occur are now very local, but of note are greater spearwort (<i>Ranunculus lingua</i>), slender tufted sedge (<i>Carex acuta</i>), marsh stitchwort (<i>Stellaria palustris</i>) and a small population of bog bean (<i>Menyanthes trifoliata</i>).
Kildale Hall SSSI	13.83km south east	Kildale Hall is listed as of national importance in the Geological Conservation Review, due to its sequence of minerogenic and organic deposits in filling a former kettlehole.
Hulam Fen SSSI	15.27km north west	Hulam Fen is a small site which supports a range of wetland and grassland vegetation developed over and around a hydrostatic spring-head, fed from the underlying Magnesian Limestone aquifer in an otherwise arable landscape. The fen consists of base-rich soligenous mire (comprising of a small sedge fen developed over peat), tall fen, marshy grassland and semi-improved neutral grassland. Within the mire a large population of the rare bird's-eye primrose (<i>Primula farinose</i>) is particularly noteworthy. Soligenous mire, tall fen and marshy grassland are all rare habitats in East Durham due to agricultural intensification and urban development.

Designated Site	Distance and direction from the Site	Reason for designation
Castle Eden Dene SSSI	16.82km north west	Castle Eden Dene is the largest and biologically the richest of a series of steep-sided wooded denes, formed as deep ravines in the Magnesian Limestone and boulder clay of the Durham Coast. Due to difficult terrain large parts of the woodland remain free from human disturbance. Majority of the woodland on base-rich soils with ash (<i>Fraxinus excelsior</i>) and wych elm (<i>Ulmus glabra</i>) as the main canopy species. The boulder clay slopes of the dene are unstable and prone to land slips which become colonised with a wide range of ruderal and wetland plants with giant horsetail (<i>Equisetum telmateia</i>) often abundant, however in time willow (<i>Salix</i> sp.) scrub becomes established. At the western end of the dene is a small grassland containing species such as blue moor-grass (<i>Sesleria albicans</i>), rock rose (<i>Helianthemum nummularium</i>) and fragrant orchid (<i>Gymnadenia conopsea</i>). The site is rich in insects with a large population of nationally and regionally rare species including the elm feeding moth, Blomer's rivulet (<i>Discoloxia blomeri</i>).
Pinkney And Gerrick SSSI	15.66km south east	Pinkney and Gerrick Woods is an area of deciduous woodland on the steep slopes of Kilton Beck. It is of importance as one of the few ancient woodland sites in Cleveland which remains in a largely semi-natural condition. The woodland canopy consists mainly of oak (<i>Quercus petraea</i>) type, ash and downy birch (<i>Betula pubescens</i>) whilst damp soils support alder (<i>Alnus glutinosa</i>). The ground flora comprises of a mosaic of plant communities which reflect local variations in soil conditions. On well-drained slopes creeping soft-grass (<i>Holcus mollis</i>) and bramble (<i>Rubus fruticosus</i>) are dominant, more base-rich soils support dog's mercury (<i>Mercurialis nerennis</i>) and bluebell (<i>Hyacinthoides non-scripta</i>) whilst wet areas beneath alder are dominated by tufted hair-grass. Within the wood there are areas of flushes where great horsetail (<i>Equisetum telmateia</i>) and hemp-agrimony (<i>Eupatorium cannabinum</i>) are present, as well as several small streams where opposite-leaved golden-saxifrage (<i>Chrysosplenium oppositifolium</i>) and large bitter-cress (<i>Cardamine amara</i>) can be seen in abundance on the banks.
Fishburn Grassland SSSI	17.00km north west	Fishburn Grassland comprises of nationally rare species-rich calcareous grassland developed over magnesian limestone. On-site the grassland is composed of two distinct communities, the first occurs exclusively in East Durham and is dominated by blue moor-grass (<i>Sesleria albicans</i>) and small scabious

Designated Site	Distance and direction from the Site	Reason for designation
		(<i>Scabiosa columbaria</i>) and the second is dominated by upright brome (<i>Bromus erectus</i>). Scrub communities form the remainder of the site.
Boulby Quarries SSSI	16.39km east	Boulby Quarries is identified as being of national importance in the Geological Conservation Review. The site provides a series of highly important cliff-top exposures which cut through the base of the mid-Jurassic Ravenscar Group into Upper Lias deposits of the Lower Jurassic Period.
Charity Land SSSI	17.09km north west	Charity Land is nationally important for its species-rich unimproved neutral grassland which remains one of the few unfragmented examples on the plateau of eastern Durham. The fields also support wetland and marshy grassland. Parts of the site have a rigg-and-furrow structure with plants characteristic of less well-drained soils such as meadowsweet (<i>Filipendula ulmaria</i>), tufted hair-grass and lady's smock (<i>Cardamine pratensis</i>) prominent in the furrows. Flooding of the River Skerne has led to the development of open water with species-poor swamps of reedmace (<i>Typha latifolia</i>), branched bur-reed (<i>Sparganium erectum</i>) and floating sweet-grass (<i>Glyceria fluitans</i>). In areas where seasonal flooding occurs there is a well-marked zone of inundation grassland with an abundance of common sedge (<i>Carex nigra</i>) and Autumn hawkbit (<i>Scorzonoides autumnalis</i>) amongst other species. There are two small fields on the eastern margin that support species-poor marsh vegetation and derelict hedgerows through and around the periphery of the site.
Newton Ketton Meadow SSSI	18.51km west	Newton Ketton Meadow is nationally important as it is one of very few surviving unimproved hay meadows in the coastal plain between the Rivers Tyne and Tees. The dominant feature of this meadow is the characteristic abundance of great burnet (<i>Sanguisorba officinalis</i>). The meadow is rich in grasses and herbs but of particular note are the variety of sedges within the sward including, glaucous sedge (<i>Carex flacca</i>), hairy sedge (<i>Carex hirta</i>), tawny sedge (<i>Carex hostiana</i>), carnation sedge (<i>Carex panicea</i>) and flea sedge (<i>Carex pulicaris</i>). On the northern edge of the site a small patch of fen vegetation merges gradually into the meadow.
Trimdon Limestone Quarry SSSI	18.60km north west	Trimdon Limestone Quarry exhibits features of both geological and botanical interest. The geological features are of national importance whilst an area of magnesian limestone grassland occurring in the abandoned quarry workings forms part of a nationally

Designated Site	Distance and direction from the Site	Reason for designation
		scarce habitat which is under threat from a cessation of grazing management.
Wingate Quarry SSSI	18.80km north west	Wingate Quarry was worked for Magnesian Limestone between the mid-18th century and the mid 1930's and is one of the largest and most varied examples of magnesian limestone grassland in County Durham. This grassland type is now nationally scarce due to agricultural land improvements and quarrying activities.
Raisby Hill Quarry SSSI	19.01km north west	Raisby Hill Quarry uniquely exposes the complete thickness of the Upper Permian Raisby Formation and provides its 'Type' or 'Reference' section. It is nationally important and forms part of the Durham Province of the Marine Permian network of sites.
Yoden Village Quarry SSSI	19.19km north west	Yoden Village Quarry is identified of national importance in the Geological Conservation review as a key site for the study of Magnesium Limestone facies and faunas.
Railway Stell West SSSI	19.20km north west	Railway Stell West, a length of ditch beside the East Coast Main Line, is the only ditch known to support a typical fenland flora in the once extensive wetland of Bradbury, Morden and Preston Carrs. This ditch exhibits a range of community types including open water, tail fen and tall herb maintained by occasional ditch clearance.
Bishop Middleham Quarry SSSI	19.46km north west	Bishop Middleham Quarry contains a disused Magnesian Limestone quarry which, since it was abandoned, been recolonised by a wide range of plant and animal species characteristic of limestone soils, several of which are rare or local. The site is known to have a diverse invertebrate fauna which includes the rare Durham Argus butterfly.
Town Kelloe Bank SSSI	19.90km north west	Town Kelloe Bank contains one of the most extensive areas of primary Magnesian Limestone grassland in Britain. The site also has a varied invertebrate fauna, a species of particular interest being the Durham Argus butterfly which occurs here at one of its few known inland localities.

10.4.13 Due to the proximity to the Site and the reasons for designation, Teesmouth and Cleveland Coast SSSI and Teesmouth NNR are scoped in to this assessment for both construction and operation.

10.4.14 Lovell Hill Pond SSSI is located over 5km from the Site and is not designated for species that are likely to utilise the Proposed Development area/ZoI or habitats that are susceptible to air pollution, it is therefore scoped out of this assessment.

- 10.4.15 Saltburn Gill SSSI is located over 9km from the Site and is designated for deciduous woodland (a habitat type that hosts lichen and bryophyte which are susceptible to air quality impacts), it is therefore scoped in for operation only.
- 10.4.16 Briarcroft Pasture SSSI is designated for species rich, unimproved neutral grassland (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.17 North York Moors SSSI is designated for mire, dry heath, blanket bog and heather moorland (habitat types that may be susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.18 Whitton Bridge Pasture SSSI is designated for species rich, unimproved neutral grassland (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.19 Durham Coast SSSI is designated for paramaritime magnesium limestone vegetation and species-rich dune systems (habitat types that may be susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.20 Hart Bog SSSI is designated for mire, bog mosses, species-poor fen, species-rich fen and scrub (habitat/vegetation types that may be susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.21 Pike Whin Bog SSSI is designated for bog (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.22 Hulam Fen SSSI is designated for fen, mire, marshy grassland and semi-improved neutral grassland (habitat/vegetation types that may be susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.23 Castle Eden Dene SSSI is designated for woodland situated on base-rich soils, it is therefore scoped in to this assessment for operation only.
- 10.4.24 Pinkney and Gerrick SSSI is designated for ancient woodland situated on base-rich soils, it is therefore scoped in to this assessment for operation only.
- 10.4.25 Fishburn Grassland SSSI is designated for rare species-rich calcareous grassland developed over magnesian limestone (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.

- 10.4.26 Charity Land SSSI is designated for species rich, unimproved neutral grassland (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.27 Newton Ketton Meadow SSSI is designated for species rich, unimproved neutral grassland (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.28 Trimdon Limestone Quarry SSSI is designated for rare species-rich calcareous grassland developed over magnesian limestone (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.29 Wingate Quarry SSSI is designated for rare species-rich calcareous grassland developed over magnesian limestone (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.30 Railway Stell West SSSI is designated for fen habitats (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.31 Bishop Middleham Quarry SSSI is designated for rare species-rich calcareous grassland developed over magnesian limestone (a habitat type that is susceptible to air quality impacts), it is therefore scoped in to this assessment for operation only.
- 10.4.32 Roseberry Topping SSSI, Langbaugh Ridge SSSI, Cliffe Ridge SSSI, Kildale Hall SSSI, Yoden Village Quarry SSSI, Boulby Quarries SSSI, and Rasiby Hill Quarry SSSI are designated for geological interest, they are therefore scoped out of this assessment.

Local statutory designated sites

- 10.4.33 All local statutory designated sites within 2km of the Site are displayed on **Figure 10.4: Locally Designated Sites within 2km (ES Volume II, Application Document Ref. 6.2)** and are listed in Table 10.10.

Table 10.10 Local Designated Sites within 2km of the Site

Designated Site	Distance and direction from the Site	Reason for designation
Eston Pumping Station LWS	Within Site (0.17 ha, 7.40% of designation)	Mosaic of habitats.
Coatham Marsh LWS	790m east	C1 Saltmarsh; C2 Coastal grasslands; E1 Fens, flushes, seepages, springs; G1 Neutral grasslands; U1 Urban grasslands; and V2 Vascular Plants.

Designated Site	Distance and direction from the Site	Reason for designation
Greatham Creek North Bank Saltmarsh LWS	1.17km north	C1 Saltmarsh. Small area of saltmarsh vegetation. Some ornithological interest but not sufficient to merit LWS status on its own. Vegetation is dominated by saltmarsh grass (<i>Puccinellia</i> sp.) with a narrow fringe of glasswort (<i>Salicornia</i> sp.).
Greenabella Marsh LWS	1.37km north	Rough grassland with wetland areas. Water vole. Slow worm (<i>Anguis fragilis</i>) & common lizard (<i>Zootoca vivipara</i>). Significant bird populations. High numbers of amphibians. Dingy skipper (<i>Erynnis tages</i>) & grayling (<i>Hipparchia semele</i>). Possibly O3 Birds – key breeding or wintering species assemblage; A4 Amphibians – good populations of three or more species; I2 Invertebrates – green hairstreak (<i>Callophrys rubi</i>) or White-letter Hairstreak (<i>Satyrus w-album</i>) or Dingy Skipper; and I6 Invertebrates – assemblages of seven or more species of dragonfly.
Saltern Saltmarsh LWS	1.72km north west	C1 Saltmarsh. Remnants of saltmarsh vegetation in tidal creeks, notably reflexed saltmarsh-grass (<i>Puccinellia distans</i>), <i>Salicornia</i> sp., lesser sea-spurrey (<i>Spergularia marina</i>), and <i>Glaux maritima</i> . The area supports 3.7% of total Teesmouth and Cleveland Coast SPA bird numbers and important site for breeding lapwing.
Zinc Works Bird Field LWS	1.91km north	An area of reclaimed land. Closely grazed grassland on the coastal migration flyway. Good numbers of Wintering and migratory waterbirds & very important for migratory passerines. Greater than 0.5% of the national population of passage ring ousels recorded.

10.4.34 Due to its proximity to the Site, Eston Pumping Station LWS is scoped in to this assessment for both construction and operation.

10.4.35 All other local designated sites are scoped out due to a lack of impact pathways arising from the Proposed Development.

Habitats and flora

Habitats of principal importance

Desk study

10.4.36 The following HoPI were identified within 2km of the Site from the desk study:

- coastal and floodplain grazing marsh;
- coastal saltmarsh;
- coastal sand dunes;

- deciduous woodland;
- lowland fen;
- mudflats;
- OMH;
- reedbeds; and
- saline lagoons.

Field survey

10.4.37 During the 2023 to 2024 [Ref 55] and 2025 to 2026 survey seasons (**Appendix 10A (ES Volume III, Application Document Ref. 6.3)**), the following HoPI were recorded within the Site:

- intertidal mudflats;
- OMH;
- reedbeds;
- rivers; and
- sheltered muddy gravels.

Evaluation

10.4.38 Due to their importance and proximity to the Site, all HoPI have been scoped in to this assessment for construction and operation.

*UK habitat classification**Field survey*

10.4.39 During the 2023 to 2024 [Ref 55] and 2025 to 2026 survey seasons (**Appendix 10A (ES Volume III, Application Document Ref. 6.3)**), the following other habitats (i.e. not HoPI) were recorded within the Site:

- artificial unvegetated, unsealed land;
- buildings;
- built linear features;
- bramble scrub;
- developed land; sealed surface;
- ditches;
- individual trees;

- mixed scrub;
- modified grassland;
- other littoral rock;
- other neutral grassland;
- other woodland; broadleaved;
- other rivers and streams;
- other sea buckthorn scrub;
- sparsely vegetated land (ruderal/ephemeral);
- sparsely vegetated land (vacant/derelict land); and
- willow scrub.

Evaluation

- 10.4.40 All habitats within the Site are scoped in to this assessment for construction and operation.

Invasive non-native species

Desk study

- 10.4.41 The following INNS were identified within 2km of the Site during the desk study:

- American mink (*Neovison vison*);
- Black rat (*Rattus rattus*);
- Canada goose (*Branta canadensis*);
- Egyptian goose (*Alopochen aegyptiaca*);
- Himalayan cotoneaster (*Cotoneaster simonsii*);
- Japanese rose (*Rosa rugosa*); and
- Mandarin duck (*Aix galericulata*).

Field survey

- 10.4.42 During the 2023 to 2024 [Ref 55] and 2025 to 2026 survey seasons (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**), the following INNS were recorded within the Site:

- Giant hogweed (*Heracleum mantegazzianum*);

- Himalayan cotoneaster;
- Japanese knotweed (*Reynoutria japonica*);
- Japanese rose;
- Montbretia (*Crocasmia x crocosmiiflora*);
- Wall cotoneaster (*Cotoneaster horizontalis*); and
- Unknown cotoneaster species (*Cotoneaster* sp.).

Evaluation

- 10.4.43 INNS have been consistently recorded within the Site and are therefore scoped in to this assessment for construction only due to risks with pre-construction site preparation and clearance.

Ancient and veteran trees

Desk study and field survey

- 10.4.44 No records of ancient or veteran trees were identified during the desk study, and no ancient or veteran trees were recorded during the 2023 to 2024 [Ref 55] and 2025 to 2026 field surveys (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).

Evaluation

- 10.4.45 As no records of ancient or veteran trees were identified and no veteran trees were recorded within the Site during the field surveys, ancient and veteran trees are scoped out of this assessment.

Fauna

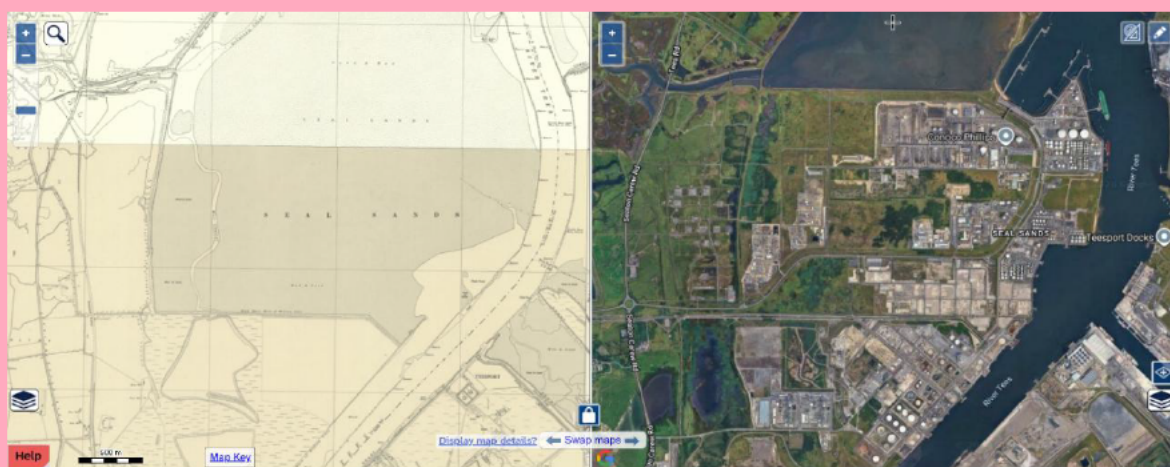
- 10.4.46 The baseline for faunal species is informed by the desk study, the results of the PEA and species-specific surveys carried out in 2025 and 2026 (**Appendix 10A to 10F (ES Volume III, Application Document Ref. 6.3))**. Species surveys undertaken in 2023 and 2024 [Ref 55] have been utilised to provide further context to the desk study.

Amphibians

Desk study

- 10.4.47 A total of 27 records of amphibians were returned in the desk study, comprising of: great crested newt, common toad (*Bufo bufo*), smooth newt, common frog (*Rana temporaria*) and an unidentified newt species (*Lissotriton* sp.). The closest record of great crested newt to the Site is approximately 3km to the north west in Cowpen Bewley.

- 10.4.48 Consultation with INCA, who regularly survey for amphibians across the North and South Tees, have stated that the only known breeding population of great crested newt is located within Cowpen Bewley (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).
- 10.4.49 No EPS licences for great crested newts were identified within the Site.
- 10.4.50 The Seal Sands industrial estate (i.e. the land east of the A178 and north the Linkline Corridor along the Main Site's southern boundary, as shown in Inset 10.1, as not reclaimed from the sea until the 1970s, so there has never been a historical population of great crested newt in this area (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).
- 10.4.51 It should also be noted that many of the waterbodies across the Seal Sands industrial estate, wider North Tees and South Tees areas are saline to varying extents due to the Tees estuary. Many of these waterbodies could support common toad however, they are considered too saline for great crested newt (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).



Inset 10.1 Side by side map of Seal Sands from the National Library of Scotland [Ref 61]. OS Map 1949 – 1975 (left) and Google Maps Satellite Map 2026 (right)

- 10.4.52 For a previous development considered under a different DCO application (PINS ref. EN010150), a total of 27 waterbodies/watercourses were identified within 250m. These were subject to HSI assessments in 2023 and 2024 [Ref 55], with seven considered to have suitability for great crested newts with a HSI score of 0.5 or higher. None of which are located within the Site but are located within 250m of the Site at the following locations:
- ditches in the north east corner of the Royal Society for the Protection of Birds (RSPB) Saltholme nature reserve;

- ditches around the SABIC bungalow east of the A178 road;
- waterbodies south east of Dorman's Pool; and
- waterbodies/watercourses within and adjacent to the Reclamation Pond.

10.4.53 Suitable terrestrial habitat providing shelter and foraging opportunities for amphibians was also identified within the Site. However, these habitat areas are fragmented and isolated from one another, with industrial development and urban infrastructure (such as roads and walls) restricting connectivity and amphibian movement.

10.4.54 A total of 29 waterbodies and 59 watercourses (including ditches and culverts) were identified within 250m of the Site by the desk study (see **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development (ES Volume II, Application Document Ref. 6.2)**). Two additional waterbodies and one additional watercourse were identified during field surveys, as described in the field survey section below.

Field survey

10.4.55 The PEA visit in April 2025 (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**), identified two additional waterbodies within the Site, specifically within the Main Site (see waterbodies 32 and 33 in **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development (ES Volume II, Application Document Ref. 6.2)**). The 2025 PEA concluded that the only waterbody within 250m of the Site potentially suitable for great crested newt was Dorman's Pool (waterbody 4 in **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development (ES Volume II, Application Document Ref. 6.2)**). All other waterbodies and watercourses identified by the desk study were either regularly dry, too saline or lacked connectivity to the Site due to artificial barriers (e.g. major roads and walls).

10.4.56 The two waterbodies within the Main Site and Dorman's Pool were subject to HSI assessments for great crested newts, all of which scored between 0.51 and 0.52 which is below average. It was not possible to complete eDNA surveys of the waterbodies within the Main Site as they dried up in early April 2025 following the PEA visit, the start of the great crested newt survey window/breeding season, likely due to an unusually dry Spring and Summer (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

10.4.57 After reviewing the attributes of the two waterbodies within the Main Site (i.e. 10-30cm deep and full of emergent vegetation), it is considered likely

they dry up by mid-summer on a regular or annual basis, thereby preventing amphibians from completing their life cycle. It was also noted that no tadpoles, larvae or efts were observed in either waterbody during the PEA visit in April 2025, a time of year when it is expected that they would be readily observed if present; therefore eDNA surveys were not completed of these waterbodies in 2026 (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).

- 10.4.58 Dorman's Pool received a low score due to its large size which supports a large population of fish and waterbirds rendering it unlikely to support great crested newts (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).

Evaluation

- 10.4.59 With an absence of eDNA data to confirm the presence/absence of great crested newt across the waterbodies/watercourses within 250m of the Site, this chapter relies upon desk study information and HSI assessments to determine their likely presence/absence and level of importance.
- 10.4.60 Given the absence of great crested newt in the Zol historically and the low suitability scores for the waterbodies considered, it is concluded that great crested newt is likely absent from the Site.
- 10.4.61 Common toads have not been recorded within the Site during any field surveys. Common toads have less strict habitat requirements than great crested newt. Suitable terrestrial habitat to support foraging and sheltering is present across much of the Zol, and waterbodies that they could utilise for breeding are present within the Zol. There are also a number of existing records of their presence in close proximity to the Site. Common toad is a SoPI designated under the NERC Act [Ref 4].
- 10.4.62 As such, amphibians are scoped in to this assessment on a precautionary basis for construction and operation.

Badger

Desk study

- 10.4.63 Two records of badger were returned in the desk study; however it should be noted that no location was provided for these due to confidentiality reasons.
- 10.4.64 Consultation with INCA confirmed that badger are considered largely absent within the Site Zol for badger following their extensive ecological survey effort and local knowledge of this area (**Appendix 10A: Preliminary**

Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)).*Field survey*

- 10.4.65 No evidence of badger has been recorded within the Site ZOI for badger and the habitats surveyed were deemed both unsuitable for badger and disconnected from the wider environment (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**). Therefore, badger are scoped out of this assessment.

*Bats**Desk study*

- 10.4.66 19 records of bats were returned in the desk study, comprising of: noctule (*Nyctalus noctule*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and an unknown pipistrelle species (*Pipistrellus* sp.).
- 10.4.67 No EPS licences for bats were identified within the Site.
- 10.4.68 Consultation with INCA confirmed that bat activity is considered low across the North and South Tees from their extensive survey effort within this area likely due to light and noise pollution from industrial sources. No confirmed roosting features have been identified within the North and South Tees either (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).

Field survey

- 10.4.69 The PEA, which included a GLTA and PBRA, identified suitable foraging and commuting habitat for bats within the Site, however no PRFs were identified (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).
- 10.4.70 Three NBWs (i.e. transect surveys) and static detector deployments were conducted within the Main Site in spring, summer and autumn 2025 (**Appendix 10B: Bat Survey and Acoustic Analysis Report (ES Volume III, Application Document Ref. 6.3))**).
- 10.4.71 Only one bat was recorded during the transects surveys, noctule, in the south west corner of the Main Site and appeared to be commuting towards Dorman's Pool. Analysis of the static detector data revealed that eight species of bat were recorded and overall bat activity across the Main Site was low, the majority of which were common pipistrelle (**Appendix 10B: Bat Survey and Acoustic Analysis Report (ES Volume III, Application Document Ref. 6.3))**).

Evaluation

- 10.4.72 As bats have been consistently recorded within the Site, albeit low levels of common pipistrelle, bats are scoped in to this assessment for construction and operation.

Breeding birds

Desk study

- 10.4.73 Over 53,000 records of birds were identified during the desk study consisting of 257 species.
- 10.4.74 Breeding bird surveys were undertaken for a previous development considered under a different DCO application which partially overlaps the Site (PINS ref. EN010150) in 2023 and 2024 [Ref 55]. Teesmouth and Cleveland Coast SPA designated species, SSSI scoring species, Schedule 1 species and other locally notable species were recorded during these surveys. SSSI scoring breeding assemblage species at the Reclamation Pond, Dabholm Gut and Bran Sands Lagoon included curlew, black-tailed godwit (*Limosa limosa*), greenshank (*Tringa nebularis*), green sandpiper (*Tringa ochropus*), little gull (*Hydrocoloeus minutus*), kingfisher (*Alcedo atthis*) and long-tailed duck (*Clangula hyemalis*).

Field survey

- 10.4.75 Breeding bird surveys have been undertaken across the Main Site from March to July 2025 (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**). Incidental records of breeding bird activity across the Main Site were also made by the ECoW during the ground investigations.
- 10.4.76 Nine qualifying features of the Teesmouth and Cleveland Coast SSSI breeding bird assemblage for sand dunes, saltmarsh, lowland open waters and their margins were recorded as possible, probable and confirmed breeding species within the Main Site. These species recorded include Cetti's warbler (two pairs), grasshopper warbler (*Locustella naevia*) (two pairs), lapwing, linnet (six pairs), marsh harrier (one pair), oystercatcher (*Haematopus ostralegus*) (two pairs), reed bunting (six pairs), ringed plover (one pair), and water rail (*Rallus aquaticus*) (one pair).
- 10.4.77 Marsh harrier and Cetti's warbler, confirmed and probable breeders at the Main Site, respectively, are also Schedule 1 species under the WCA [Ref 1].
- 10.4.78 Two locally notable species under the Tees Valley BAP [Ref 20], grey partridge (one pair) and ringed plover, were recorded as possible and probable breeding species within the Main Site during the 2025 surveys.

- 10.4.79 Seven red listed species under the BoCC5 [Ref 29] were recorded as possible, probable and confirmed breeding species within the Main Site. These species included greenfinch (*Chloris chloris*) (one pair), grey partridge, lapwing, linnet, ringed plover, skylark (seven pairs) and grasshopper warbler.
- 10.4.80 Incidental records from the ECoW confirmed the presence of all these species across the Main Site as well as breeding activity in 2026, with the exception of water rail. A breeding pair of marsh harrier was confirmed in the same location in mid-March. At least two pairs of ringed plover were consistently recorded, including one nest with eggs.
- 10.4.81 In addition to the results of the breeding bird surveys, the PEA recorded notable possible breeding species across the Wider Site (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**. Notable species included one pair of curlew and sedge warbler along the southern bank of Dabholm Gut. Several singing chiffchaffs (*Phylloscopus collybita*), meadow pipits (*Anthis pratensis*), stonechat (*Saxicola rubicola*), dunnock (*Prunella modularis*) and other passerines were also recorded within areas of scrub and neutral grassland across the Wider Site.
- 10.4.82 The Site is not considered to act as FLL for breeding bird species which are qualifying features of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI as the numbers recorded are not significant when compared to the wider Tees estuary and citation populations.

Evaluation

- 10.4.83 Due to the presence of protected and notable species confirmed to be breeding at the Main Site and other notable breeding species recorded across the Wider Site, breeding birds are scoped in to this assessment for construction and operation.

Wintering birds

Desk study

- 10.4.84 Over 53,000 records of birds were identified during the desk study consisting of 257 species.
- 10.4.85 Wintering bird surveys were undertaken for a previous development considered under a different DCO application which overlaps the Site (PINS ref. EN010150) in 2023 and 2024 by walked and driven transects [Ref 55]. Two qualifying species of the Teesmouth and Cleveland Coast Ramsar, common redshank and pied avocet, were recorded during these surveys at RSPB Saltholme Pool and Dorman's Pool.

- 10.4.86 Wintering and passage bird activity was also recorded within areas of saltmarsh, reedbed and OMH outside the Site, including at the Reclamation Pond [Ref 55].

Field survey

- 10.4.87 Wintering bird surveys have been undertaken across the Site Zol from November 2025 to February 2026 inclusive with spring passage surveys undertaken from March to April 2026 inclusive (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**).
- 10.4.88 The surveys comprised six compartments (1, 2, 3, 6, 7 and 8) within the Teesmouth and Cleveland Coast SPA, Ramsar Site and SSSI. Three compartments (4, 5 and 9) were located outside the designated sites (see **Figure 10.8: Wintering Bird Survey Compartments (ES Volume II, Application Document Ref. 6.2)**).
- 10.4.89 Eight qualifying features of the Teesmouth and Cleveland Coast SPA and Ramsar were recorded within the Site Zol including avocet, black-headed gull, common redshank, gadwall, herring gull, lapwing, shoveler and wigeon.
- 10.4.90 Five qualifying features of the Teesmouth and Cleveland Coast SSSI and Teesmouth NNR were recorded within the Site Zol including avocet, common redshank, gadwall, shelduck and shoveler.
- 10.4.91 Marsh harrier, a Schedule 1 species under WCA [Ref 1], were recorded overwintering within 250m of the Main Site breeding territory.
- 10.4.92 Two locally notable species under the Tees Valley BAP [Ref 20], grey partridge and shelduck, were recorded overwintering within the Site Zol.
- 10.4.93 Nine red listed species under the BoCC5 [Ref 29] were recorded overwintering within the Site Zol. These species included curlew, fieldfare, goldeneye, grey partridge, herring gull, lapwing, linnet, pochard and skylark.
- 10.4.94 For wintering birds, seven of the nine compartments were assessed as providing 'moderate conservation value' and functionally linked land (FLL) and two are assessed as 'low conservation value' and not FLL (compartment 5 and 9). For passage waterbirds, using a precautionary approach, eight compartments have regional importance and are FLL, including the Main Site and one has local importance and is not FLL (compartment 9) (see **Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)** and **Figure 10.8: Wintering Bird Survey Compartments (ES Volume II, Application Document Ref. 6.2)**).

- 10.4.95 Significant numbers of protected and notable wintering and passage birds were calculated from the BTO [Ref 62] and included:
- Avocet at compartment 1, only during spring passage, were considered to be regionally important;
 - Common redshank at compartment 1, 4, 6, 7 and 8 were considered to be regionally important.
 - Curlew at compartment 2, 4, 6, 7 and 8 were considered to be regionally important;
 - Gadwall at compartment 1, 2, 3, 4 and 8 were considered to be nationally important;
 - Lapwing at compartment 1, 2, 5, 6, 7 and 8 were considered to be regionally important;
 - Pochard at compartment 2 were considered to be regionally important;
 - Shoveler at compartment 1, 2 and 3 were considered to be nationally important; and
 - Wigeon numbers at compartments 1 and 2 were considered regionally important.
- 10.4.96 The Site is not considered to act as FLL for wintering/passage bird species which are qualifying features of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI as these significant numbers were recorded outside the Site and within the boundaries of these statutory designated sites.

Evaluation

- 10.4.97 Due to the presence of protected and notable wintering species, including qualifying features for the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI within the Site Zol, wintering birds are scoped in to this assessment for construction and operation.

Otter

Desk study

- 10.4.98 Eight records of otter were identified in the desk study.
- 10.4.99 Consultation with INCA confirmed that otters are established across all suitable waterbodies and watercourses in Teesside with the closest known records located at Dorman's Pool (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**. Otters are also known to use to the River Tees for commuting and foraging

opportunities (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3))**).

10.4.100 Otter surveys were undertaken for a previous development considered under a different DCO application which overlaps the Site (PINS ref. EN010150) in spring 2023 and autumn 2024 [Ref 55]. No field signs of otter were recorded, but watercourses adjacent to the Site were considered suitable habitat for commuting, foraging and resting otter.

10.4.101 A total of 22 waterbodies and 50 watercourses (including ditches and culverts) were identified within 100m of the Site by the desk study (see **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development (ES Volume II, Application Document Ref. 6.2))**).

Field survey

10.4.102 With the exception of one small overgrown ditch (watercourse 81) and the two overgrown waterbodies within the Main Site (waterbody 32 and 33 in **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development (ES Volume II, Application Document Ref. 6.2))**), no other watercourses or waterbodies were identified within the Site during the PEA. The terrestrial habitats and intertidal foreshore recorded within the Site were deemed suitable for commuting otter between the habitats and pools present at RSPB Saltholme and the River Tees (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).

10.4.103 Watercourses and waterbodies within 100m of the Wider Site have been assessed for their suitability to support otter, with those deemed suitable subject to a field sign survey in May 2026 (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3))**).

10.4.104 The majority of watercourses and waterbodies within the Site ZOI are considered suitable habitat for otter. The areas considered most valuable to otter that are also most likely to be impacted by the Proposed Development include, see Appendix 1 in **Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)**:

- Ditches 7,8 and 10 in the north east corner of RSPB Saltholme, west of the A178;
- Ditches 1-6 and 9 around the SABIC bungalow, east of the A178;
- Dabholm Beck (watercourse 54), Cut (watercourse 56) and Gut (watercourse 27); and

- Bran Sands Lagoon (waterbody 9).

10.4.105 Field surveys carried out in May to July 2026 found no field signs of otter across these habitats. Potential resting habitat was identified in several locations along the western end of Dabholm Gut and on the banks of Bran Sands Lagoon. It was also considered that otter use these habitats for foraging and commuting between other riparian habitats (e.g. River Tees and Coatham Marsh).

Evaluation

10.4.106 Due to the likely presence of otter across the Site Zol, otter are scoped in to this assessment for construction and operation.

Water vole

Desk study

10.4.107 A total of 27 records of water vole were identified in the desk study.

10.4.108 Consultation with INCA confirmed that water vole populations north of the River Tees have been almost entirely confined to RSPB Saltholme, Cowpen Marsh, and Greenabella Marsh. South of the River Tees water vole are likely present in Guisborough and Middlesborough (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**). All of these locations are beyond the Zol for water vole.

10.4.109 Water vole surveys were undertaken for a previous development considered under a different DCO application which overlaps the Site (PINS ref. EN010150) in spring 2023 and autumn 2024 [Ref 55]. No confirmed field signs of water vole were recorded, but watercourses adjacent to the Site were considered suitable for water vole. Unknown burrows were recorded, however these were not confirmed to be water vole.

Field survey

10.4.110 No suitable habitat for water vole was identified within the Site during the PEA (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

10.4.111 Watercourses and waterbodies within 100m of the Wider Site have been assessed for their suitability to support water vole, with those deemed suitable subject to a field sign survey in May 2026 (**Appendix 10E (ES Volume III, Application Document Ref. 6.3)**).

10.4.112 All watercourses and waterbodies identified south of the River Tees are considered unsuitable for water vole as they are either too saline or have significant artificial encroachments in their riparian zone and channels (e.g.

artificial banks, culverts, flood gates). The areas considered suitable habitat for water vole within the Site ZOI include, see Appendix 1 in **Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)**:

- Ditches 7,8 and 10 in the north east corner of RSPB Saltholme, west of the A178; and
- Ditches 1-6 and 9 around the SABIC bungalow, east of the A178.

10.4.113 Field surveys carried out in May and July 2026 found no field signs of water vole despite suitable habitats being recorded which could provide burrowing, foraging and commuting opportunities.

Evaluation

10.4.114 As water vole are considered only to be present within the ditches near RSPB Saltholme, mentioned above, water vole are scoped in to this assessment for construction only.

Other terrestrial mammals

Desk study

10.4.115 298 records of other mammals were identified in the desk study, consisting of eight species. Of these, three are considered important within the scope of this assessment: West European hedgehog, brown hare and harvest mouse (*Micromys minutus*).

10.4.116 None of these species were recorded during the 2023 to 2024 field surveys undertaken for a previous development considered under a different DCO application which overlaps the Site (PINS ref. EN010150) however, suitable habitat was identified [Ref 55].

Field survey

10.4.117 The PEA identified suitable habitat for all three terrestrial mammal species within the Site and recommended that they are mitigated for during construction (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

Evaluation

10.4.118 Due to the potential presence of other terrestrial mammals within the Site, terrestrial mammals are scoped in to this assessment for construction and operation.

Terrestrial invertebrates

Desk study

- 10.4.119 135 records of notable terrestrial invertebrates were identified during the desk study, comprising of 20 species. This included SoPI, Tees Valley BAP species and Red List species for Great Britain. Most of which are *lepidoptera* species (i.e. moths and butterflies)
- 10.4.120 The 13 SoPI included barred green colonel (*Odontomyia hydroleon*), cinnabar (*Tyria jacobaeae*), crescent (*Celaena leucostigma*), dingy skipper, dusky brocade (*Apamea remissa*), garden tiger (*Arctia caja*), grayling, knot grass (*Acronicta rumicis*), shaded broad-bar (*Scotopteryx chenopodiata*), small blue (*Cupido minimus*), small heath (*Coenonympha pamphilus*), wall (*Lasiommata megera*) and white ermine (*Spilosoma lubricipeda*).
- 10.4.121 Terrestrial invertebrate surveys were undertaken for a previous development considered under a different DCO application which overlaps the Site (PINS ref. EN010150) in 2024 [Ref 55]. 392 species were recorded with 21 species having a nature conservation status. Overall, the habitats surveyed were deemed to have high value for invertebrates supporting nationally important species.

Field survey

- 10.4.122 Lepidoptera surveys were carried out within the Main Site in Summer 2025. No species with statutory protection were recorded, however SoPI and Tees Valley BAP species were recorded including dingy skipper, grayling and small blue butterfly. These species were recorded in numbers which exceed the criteria for Tees Valley LWS selection and were noted as being of “county” or “sub-regional” significance (**Appendix 10F: Terrestrial Invertebrates Survey Report (ES Volume III, Application Document Ref. 6.3))**).
- 10.4.123 Habitat suitable for statutory species was recorded within the Main Site, including OMH and reedbeds. Grayling butterfly are also a scoring species for the invertebrate assemblage qualifying feature of the Teesmouth and Cleveland Coast SSSI.
- 10.4.124 The PEA recorded suitable habitats for a range of terrestrial invertebrate species across the Wider Site however, routine use of tracks/roadways by operators and the maintenance of urban habitats and edges of scrub, grassland habitats (e.g. pesticide spraying, mowing) likely reduces suitability for protected or notable species (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3))**).

Evaluation

10.4.125 As notable terrestrial invertebrates have been recorded within the Site, terrestrial invertebrates have been scoped in to this assessment for construction and operation.

*Reptiles**Desk study*

10.4.126 Eight reptile records were identified within the desk study, consisting of common lizard, adder (*Vipera berus*), slow-worm, red-eared terrapin (*Trachemys scripta elegans*), and slider terrapin (*Trachemys scripta*).

10.4.127 Consultation with INCA confirmed that reptile records north of the River Tees are limited to common lizard recorded at Dorman's Pool and those south of the River Tees are also limited to common lizard at South Gare. Surveys known to have been conducted across the Seal Sands industrial estate and along Dabholm Cut/Beck have resulted in either single counts of common lizard or no counts of reptiles (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

10.4.128 Reptile surveys were undertaken for a previous development considered under a different DCO application which overlaps the Site (PINS ref. EN010150) in 2024, with no reptiles recorded [Ref 55].

Field survey

10.4.129 During the PEA walkover, habitats within the Main Site were deemed to have low suitability for reptiles due to the vegetation structure and large areas of exposed urban habitat. The northern part of the Main Site (i.e. north of Seal Sands Road) does include some suitable habitat for reptiles in the form of sandy substrate neutral grassland and OMH with connectivity to other suitable habitat within the Seal Sands industrial estate (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

10.4.130 Suitable habitat was recorded across the Wider Site during the PEA in the form of large piles of aggregates under derelict railways and along existing tracks/roadways as well as patches of dense grassland and scrub. Routine use and maintenance of these areas by operators (e.g. pesticide spraying, mowing) and physical barriers (e.g. roads and walls) likely reduces suitability for reptiles.

Evaluation

10.4.131 As there are no records of reptiles within the Site and habitats offer low suitability and connectivity, reptiles are considered likely absent and therefore have been *scoped out* of this assessment.

Summary

Table 10.11 Summary of baseline ecological features

Feature	Construction	Operation
<u>Statutory designated sites – international:</u> Teesmouth and Cleveland Coast SPA & Ramsar	Scoped In	Scoped In
<u>Statutory designated sites – international:</u> North York Moors SPA, North York Moors SAC, Northumbria Coast SPA, Northumbria Coast Ramsar, Durham Coast SAC and Castle Eden Dene SAC	Scoped Out	Scoped In
<u>Statutory designated sites – national:</u> Teesmouth and Cleveland Coast SSSI and Teesmouth NNR	Scoped In	Scoped In
<u>Statutory designated sites – national:</u> Saltburn Gill SSSI, Briarcroft Pasture SSSI, North York Moors SSSI, Whitton Bridge Pasture SSSI, Durham Coast SSSI, Hart Bog SSSI, Pike Whin Bog SSSI, Hulam Fen SSSI, Castle Eden Dene SSSI, Pinkney and Gerrick SSSI, Fishburn Grassland SSSI, Charity Land SSSI, Newton Ketton Meadow SSSI, Trimdon Limestone Quarry SSSI, Wingate Quarry SSSI, Railway Stell West SSSI and Bishop Middleham Quarry SSSI	Scoped Out	Scoped In
<u>Statutory designated sites – national:</u> Lovell Hill Pond SSSI, Roseberry Topping SSSI, Langbaugh Ridge SSSI, Cliff Ridge SSSI, Kildale Hall SSSI, Boulby Quarries SSSI, Raisby Hill Quarry SSSI and Yoden Village Quarry SSSI	Scoped Out	Scoped Out
<u>Local designated sites:</u> Eston Pumping Station LWS	Scoped In	Scoped In
<u>Local designated sites:</u> Coatham Marsh LWS, Greatham Creek North Bank Saltmarsh LWS, Greenabella Marsh LWS, Saltern Saltmarsh LWS and Zinc Works Bird Field LWS	Scoped Out	Scoped Out
HoPI	Scoped In	Scoped In
Other habitats	Scoped In	Scoped In
INNS	Scoped In	Scoped Out
Ancient or veteran trees	Scoped Out	Scoped Out
Amphibians	Scoped In	Scoped In
Badger	Scoped Out	Scoped Out
Bats	Scoped In	Scoped In
Breeding birds	Scoped In	Scoped In

Feature	Construction	Operation
Wintering birds	Scoped In	Scoped In
Otter	Scoped In	Scoped In
Water vole	Scoped In	Scoped Out
Other terrestrial mammals	Scoped In	Scoped In
Terrestrial invertebrates	Scoped In	Scoped In
Reptiles	Scoped Out	Scoped Out

Future baseline

- 10.4.132 Climate change and flood risk, natural succession of habitats, the introduction of new features into an area and the continued operation of existing developments can all influence the future baseline (see **Chapter 15: Climate Change Resilience and Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**). This may result in a change of habitat type over time.
- 10.4.133 Areas more likely to flood, including designated sites, may change to habitats typical of wetter environments such as wetlands and marshes. Habitats may also alter as a result of increased occurrence of droughts, milder Winters and an increase in major storm events.
- 10.4.134 Invasive species can colonise quickly where previously absent.
- 10.4.135 Water quality is expected to improve due to legislation requirements and interventions such as Nutrient Neutrality Policy and Water Framework Directive (WFD) targets, positively supporting terrestrial ecology.
- 10.4.136 In the absence of the Proposed Development or any other potential future developments, the existing habitats within the Site would be expected to undergo natural succession under current management practices, unless altered by other proposed developments that may influence the future baseline. As no substantive changes in habitat context and condition are predicted, the species value of the Proposed Development and adjacent land is likely to remain consistent with the current baseline. Minor changes (upwards or downwards) in the distribution of some species (e.g. nesting birds, terrestrial invertebrates and bats) may occur in line with small-scale changes in habitat structure as a result of ecological succession or other natural processes. Any such changes are likely to be within the range of normal inter-annual variation in the distribution and abundance of species populations. In addition, potentially relevant protected species could establish in new locations where they would impose new working constraints, due to legislation protecting these species.

10.4.137 Any remedial works would be expected to be temporary, short-term and localised in duration. Furthermore, remedial works would be required to be subject to appropriate mitigation measures, likely including measures outlined in a Noise Management Plan (NMP) and Dust Management Plan (DMP). Therefore, this would limit the potential for significant disturbance impacts to surrounding ecological features.

Evaluation of importance of ecological features

10.4.138 Each ecological feature and the rationale of its importance are summarised in Table 10.12.

Designated sites

10.4.139 The designated sites scoped in for assessment have been evaluated at the international, national and borough level of importance depending upon their level of designation.

Habitats and flora

10.4.140 HoPI scoped in for assessment have been evaluated at the borough level of importance as while HoPI are habitats of national conservation importance, the areas of HoPI present within the Site are considered to be of borough value due to their extent, condition and widespread distribution within the borough. Furthermore, they are not considered to be of national value as the area of each HoPI within the Site makes up less than 1% of the total HoPI area of that habitat.

10.4.141 All other habitats have been evaluated at the local level as they are common and widespread habitats across the Tees Valley.

Fauna

10.4.142 The desk study and field surveys indicate great crested newt are likely absent from the Site Zol however, suitable habitat for amphibian species, most notably common toad SoPI, has been recorded within the Site Zol; while common toad are of national conservation concern, the habitat present is considered to be of local value due to the widespread distribution of the species and the likely small size of the population supported.

10.4.143 Bats have been evaluated at the local level as they are a species of local importance under the Tees Valley BAP however only low levels of activity by common species have been recorded within the Site Zol.

10.4.144 Breeding birds have been evaluated up to the international level due to the presence of qualifying features for the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI, Schedule 1 species under WCA [Ref 1], and species of local importance under the Tees Valley BAP [Ref 20].

10.4.145 Wintering birds have been evaluated up to the international level due to the presence of qualifying features for the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI, and species of local importance under the Tees Valley BAP [Ref 20].

10.4.146 Otter have been evaluated at the local level as they are not a species of local importance or recognised as qualifying species for any designated site however they are considered likely to be present foraging and/or commuting within the Site Zol.

10.4.147 Water vole have been evaluated at the local level as they are a species of local importance under the Tees Valley BAP, however only low numbers across a restricted geographic scale have been recorded within the Site Zol.

10.4.148 All other terrestrial mammals have been evaluated at the local level as they include species of local importance under the Tees Valley BAP however, only low numbers have been recorded within the Site Zol.

10.4.149 Terrestrial invertebrates have been evaluated at the national level due to the presence of significant numbers of qualifying features for the Teesmouth and Cleveland Coast SSSI, SoPI and species of local importance under the Tees Valley BAP [Ref 20] within the Site Zol.

Table 10.12 Importance of ecological features

Feature	Importance	Rationale
Statutory designated sites – international	International	Potential for damage to a European designated site
Statutory designated sites – national	National	Potential for damage to a nationally designated site
Local designated sites	Borough	Potential for damage to a locally designated site
HoPI	Borough	Potential for damage to nationally designated habitats
Other habitats	Local	Potential for damage to common and widespread habitats
Amphibians	Local	Potential for harm to small populations of amphibians including common toad (SoPI)
Bats	Local	Potential for harm to small populations of bats
Breeding Birds	Local	Potential for harm to common and widespread breeding bird species
	Borough	Potential for harm to borough significant populations of breeding birds, BoCC5 red listed species and species listed under the Tees Valley BAP

Feature	Importance	Rationale
	Regional	Potential for harm to regionally significant populations of breeding birds that have statutory protection
	National	Potential for harm to significant populations of breeding birds listed within citations of national designated sites
	International	Potential for harm to significant populations of breeding birds listed within citations of international designated sites
Wintering birds	Local	Potential for harm to common and widespread wintering bird species
	Borough	Potential for harm to borough significant populations of wintering birds, BoCC5 red listed species and species listed under the Tees Valley BAP
	National	Potential for harm to significant populations of wintering birds listed within citations of national designated sites
	International	Potential for harm to significant populations of wintering birds listed within citations of international designated sites
Otter	Local	Potential for harm to populations of otter
Water vole	Local	Potential for harm to small populations of water vole
Other mammals	Local	Potential for harm to small populations of statutory protected mammals
Terrestrial invertebrates	National	Potential for harm to significant population of grayling listed within citation of national designated site
	Borough	Potential for harm to borough significant populations of notable terrestrial invertebrates

10.5 Development design and impact avoidance

Overview

- 10.5.1 The design of the Proposed Development is an iterative process and subject to revision and refinement. As stated in **Chapter 4: Proposed Development (ES Volume I, Application Document Ref. 6.1)**, embedded mitigation will be included as part of the design.
- 10.5.2 As a general principle, the mitigation hierarchy has been applied, having regard to the purpose of this nationally significant infrastructure. Avoidance of significant effects (in the first instance) and mitigation measures have been developed throughout the design process of the Proposed Development to reduce the impact of adverse effects. The loss of notable

habitat/HoPI has been avoided where possible during the design of the Proposed Development (e.g. areas of reedbed, Open Mosaic Habitat and sparsely vegetated habitat providing FLL for qualifying birds of the Teesmouth SSSI, breeding habitat for Schedule 1 bird species (e.g. marsh harrier) and Functionally Linked Habitat (FLH) for qualifying invertebrates of the SSSI). Where the loss of this habitat has been unavoidable, offsite mitigation has included the creation of better quality habitats to compensate for those lost during construction and enhancement of existing habitats to be retained (this is outlined in section 10.7 and set out in full within the **FLBMES (Application Document Ref. 5.8)**).

- 10.5.3 The following represents embedded avoidance and mitigation measures that will be enforced during the design of the Proposed Development.

Construction phase

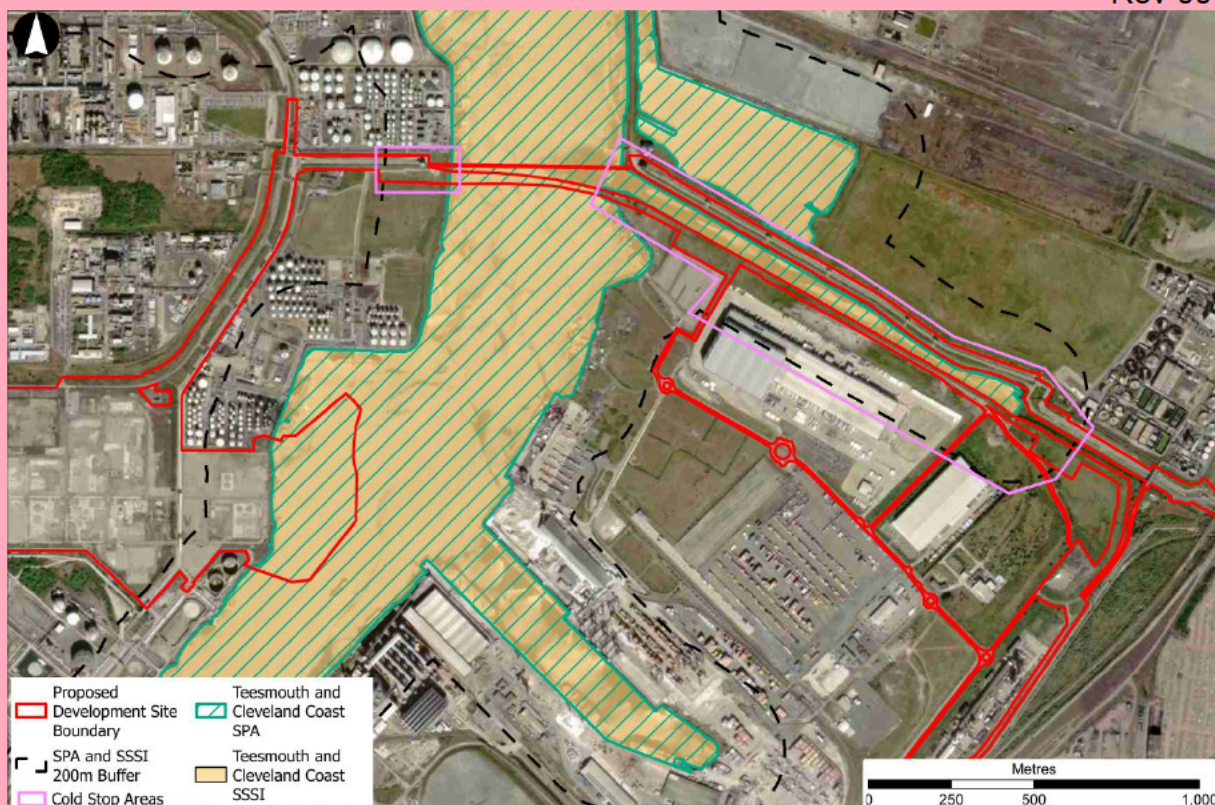
- 10.5.4 The layout of the construction laydown areas and Sustainable Aviation Fuel (SAF) Production Facility during the construction phase will be designed to minimise potential air quality, noise, vibration, visual and lighting impacts on ecological features within proximity to the Site (e.g. bird assemblages or qualifying features of the Teesmouth and Cleveland Coast SPA). This includes designing the construction programme so that activities which could result in significant impacts are sited in locations further from ecological features and away from physical features which could reflect towards ecological features. Further details are provided in the **Report to Inform HRA (Application Document Ref. 5.11)** and the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.
- 10.5.5 Measures intended to avoid or reduce impacts associated with the proposed quay construction have been considered in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)**.
- 10.5.6 Measures intended to avoid or reduce air and water emission impacts as well as noise and vibration impacts during the construction phase will be embedded into the design of the Proposed Development. This will help minimise impacts on surrounding habitats, including statutory designated sites. Further details are provided in **Chapter 8: Air Quality, Chapter 9: Noise and Vibration, and Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**.
- 10.5.7 The Proposed Development will involve pipelines crossing the River Tees, which lies within the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI. It is proposed that the Proposed Development will use existing pipelines and Horizontal Directional Drilling (HDD) under the River Tees,

removing the need for additional crossings (**Chapter 4: Proposed Development (ES Volume I, Application Document Ref. 6.1))**).

10.5.8 A CEMP for the Proposed Development will be produced to cover works during the construction phase with an **fCEMP** submitted as part of the DCO application (**Appendix 5A, ES Volume III, Application Document Ref. 6.3**). The fCEMP details good industry practice mitigation measures to be incorporated into the Proposed Development during the construction phase. It forms the basis of the Final CEMP which will be provided by the appointed contractor prior to works commencing. Measures within the fCEMP relevant to terrestrial ecology include:

- habitat clearance will be limited to areas needed to facilitate construction works, with areas of existing vegetation around Site margins being retained;
- protective fencing will be used where necessary to demarcate habitats to be retained and prevent access from construction plant and operatives;
- work areas adjacent to sensitive habitats (e.g. those used by notable populations of breeding/wintering birds outlined in **Figure 10.9: Acoustic Screening (ES Volume II, Application Document Ref. 6.2)**) will require advice sought by a suitably qualified ECoW to advise on required visual and noise screening on perimeter fences to reduce visual and noise disturbance. ECoW presence and sound level monitoring at these locations is also required to monitor animal behaviour and ensure works do not exceed the threshold for disturbance (55dB L_{Aeq}) and/or disturb sensitive ecological features;
- it is recommended that any works requiring vegetation clearance is undertaken to avoid the breeding bird season (March to August inclusive). Where this is not possible, all vegetation clearance work must be done under the supervision of an Ecological Clerk of Works (ECoW);
- updated ecological surveys for all sensitive species should works commence more than 18 months after the field surveys were completed (see **Appendix 10A to 10F (ES Volume III, Application Document Ref. 6.3)**);
- implementation of an invasive species management plan will be developed to prevent the spread of INNS of flora and fauna during construction;

- the construction programme will be kept to the minimum amount of time needed complete the works, in order to minimise the temporal extent of disturbance to ecological features;
- sensitive timing and programming of construction will aim to avoid and then minimise impacts upon ecological features. For example, where practicable vegetation clearance will not occur from March to August (inclusive) to avoid the breeding season for most protected and/or notable fauna species. Where certain sensitive periods cannot feasibly be avoided, the use of visual and acoustic screening will be developed and employed during construction to avoid disturbance to nearby ecological features;
- if temperatures of zero degrees Celsius (or lower) occur on the Site, at any point within a 24-hour period, for five consecutive days leading up to or during the works period, all noisy construction works within 200m of locations with significant populations of qualifying features of the Teesmouth and Cleveland Coast SPA/Ramsar/SSSI (e.g. >1% Tees estuary five year average (2019/20-2023/24) will be suspended. Based on the results of the field surveys, particularly wintering birds (see **Appendix 10A to 10F (ES Volume III, Application Document Ref. 6.3))**, this includes connection corridor works west of the Navigator Foreshore and along the north and south banks of Dabholm Gut (see areas outlined in pink on Inset 10.2). Once temperatures have not dropped to zero degrees Celsius or below for three consecutive days then works will recommence;



Inset 10.2 200m buffer of the Teesmouth and Cleveland Coast SPA and SSSI in relation to the Site boundary. Areas within the Site subject to cold temperature work suspensions are outlined in pink

- soft-start techniques for plant and equipment to minimise loud, percussive noises most disturbing to birds, where practicable, to be secured via a NMP;
- careful selection of plant and machinery, access routes and construction methods, the use of noise and visual reduction measures/barriers on operational plant machinery, equipment and vehicles, and timing works to reduce unnecessary noise in areas that are not being utilised for construction purposes, to be secured via an NMP;
- where reasonably practicable, fixed items of construction plant shall be electrically powered in preference to combustion engine driven to reduce air quality and noise impacts;
- dust suppression measures, to be secured via a DMP;
- materials for night-time working shall be delivered, where practicable, during normal hours of working and be placed as close as practicable to the work area for which they are required;
- good industry practice measures for pollution prevention to minimise impacts on surrounding habitats, such as a suitable drainage design,

safely storing chemical/fuels, use of silt fences, avoiding earthworks during wet weather, and storing sub/topsoil at least 20m from watercourses. These measures are to be secured by a construction drainage strategy in line with the Control of Water Pollution from Construction Sites agreed with the relevant authorities;

- implementation of a lighting strategy that ensures the sensitive use of artificial lighting within the Site to minimise light spill into adjacent habitats and reduction of unnecessary lighting in areas that are not being utilised for construction purposes; and
- early revegetation of the completed elements of the construction area should be undertaken to reduce the risk of erosion and dust emissions.

10.5.9 **A Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** for the Proposed Development has been produced to cover works during the construction phase (**Requirement 12** within the **Draft DCO, Application Document Ref. 3.1**). A detailed Lighting Strategy will be developed by the appointed Contractor prior to the commencement of the construction and operational phases of the Proposed Development. There is also a dDCO Requirement to require all external lighting to be installed during construction to be submitted to the local planning authority for approval, and for this to be in accordance with the framework. Measures within the strategy relevant to terrestrial ecology may include:

- avoid light spill over water and river banks when decommissioning the existing and constructing the proposed quay and pipelines;
- avoid light spill into designated sites during the construction of the pipelines, SAF plant, conveying corridors and when utilising haul roads;
- installation of temporary fencing screens to shield any light spill beyond construction working areas where in proximity to ecological features;
- lights will be aimed to prevent any upward light spill, with horizontal cut-off luminaires and zero tilt during the construction;
- where applicable lights will be energised only when required to reduce unnecessary lighting during the construction; and
- lighting will be visually checked after installation during night-time from the perspective of sensitive receptors and any necessary adjustments promptly made during the construction.

10.5.10 More information and detail on the management plans for construction can be found in **Chapter 5: Construction Programme and Management (ES**

Volume I, Application Document Ref. 6.1), including overall site management in accordance with good industry practice and relevant British Standards, to mitigate and minimise impacts of construction works as far as is reasonably practicable.

Operational phase

- 10.5.11 The layout of the SAF Production Facility will be designed to minimise potential air quality, noise, vibration, visual and lighting impacts on ecological features during the operational phase (e.g. bird assemblages or qualifying features of the Teesmouth and Cleveland Coast SPA). This includes designing the layout of buildings and infrastructure so that activities which could result in significant impacts are sited in locations further from ecological features and away from physical features which could reflect towards ecological features. Further details are provided in the **Report to Inform HRA (Application Document Ref. 5.11)** and the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.
- 10.5.12 Measures intended to avoid or reduce impacts associated with the operation of the proposed quay has been considered in included in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)**.
- 10.5.13 Measures intended to avoid or reduce air and water emission impacts as well as noise and vibration impacts during the operational phase will be embedded into the design of the Proposed Development. This will help minimise impacts on surrounding habitats, including statutory designated sites. Further details are provided in **Chapter 8: Air Quality, Chapter 9: Noise and Vibration, and Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**. Measures relevant to terrestrial ecology include:
- A minimum sound reduction index (SRI) has been assumed for facades of any enclosures and buildings which have continuously operating plant inside, to control sound levels (due to plant noise breakout) at the nearest ecological interest features. Refer to **Chapter 9: Noise and Vibration (ES Volume I, Application Document Ref 6.1)** for further details;
 - specific noise limits have been applied for the stack vents and quayside unloading plant (fefer to **Chapter 9: Noise and Vibration (ES Volume I, Application Document Ref 6.1)** for further details);
 - sensitive lighting scheme for any permanent lighting to be installed as part of the Proposed Development in accordance with the Framework

Lighting Strategy. Refer to the **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** for further information;

- cladding and finishing materials used for the components of the Proposed Development will include visually recessive, non-reflective colours to reduce their visual prominence, glare/glint and to blend in with surrounding industrial features;
- emissions of nitrogen oxides (NO_x) from the Proposed Development will be controlled through various measures including primary emission controls such as the use of low-NO_x burners and secondary abatement controls such as Selective Non-Catalytic Reduction/Selective Catalytic Reduction (SNCR/SCR). Emissions of SO₂ will be controlled through both wet and dry scrubbing and NH₃ (due to SNCR/SCR use for NO_x abatement) via wet scrubbing (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**); and
- for the Main Site, drainage systems will collect surface water and direct it to a network of attenuation ponds where it will be tested prior to being pumped and discharged to the Tees via a new extension of the existing outfall incorporated into the quay. In the event of contamination being identified, the water would either be treated on site and discharged under the environmental permit requirements or tankered off site for treatment or disposal.

10.5.14 The Proposed Development intends to pipe industrial wastewater to the nearby Bran Sands WwTW for any required additional treatment and appropriate discharge. Bran Sands WwTW currently discharges treated effluent to the Dabholm Gut, which in turn discharges to the Tees Estuary. Northumbrian Water Ltd (NWL) is proposing to construct a long sea outfall (LSO) underground northward from Bran Sands to Tees Bay to mitigate water quality impacts on the Tees Estuary. This pipeline will divert treated effluent discharges from the Tees Estuary to the North Sea and thereby reduce nutrient nitrogen concentrations within the Tees Transitional Waterbody and Tees Bay. This is expected to be operational by 1 April 2030 in advance of the operation of the Proposed Development in 2031. When operational, this LSO will discharge treated effluent from industries within Teesside including from the Proposed Development.

10.5.15 **Chapter 5: Construction Programme and Management (ES Volume I, Application Document Ref. 6.1)**, describes how the Proposed Development will commence commercial operation in 2031. It is therefore expected that the Bran Sands LSO will be operational in advance of the

Proposed Development becoming operational and it can be used for discharge of treated water to the North Sea rather than the Tees Estuary.

- 10.5.16 Further details on the embedded mitigation required to ensure no adverse water quality effect on designated sites and compliance with the Habitats Regulations are provided in **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**.

Decommissioning

- 10.5.17 Prohibited materials (e.g. asbestos, polychlorinated biphenyls (PCBs), ozone depleting substances and carcinogenic materials) will not be allowed within the design of the Proposed Development and the prevention of contamination is a specific requirement of the Environmental Permit for the operation of the Proposed Development and therefore it is being designed such that it will not create any new areas of ground contamination or pathways to ecological features.
- 10.5.18 A Decommissioning Environmental Management Plan (DEMP) will be produced and will be agreed with the EA as part of the Environmental Permit and site closure plan. The DEMP will consider in detail all potential environmental risks and contain guidance on how risks can be removed, mitigated or managed. This will include details of how decommissioning activities can minimise potential noise, vibration, visual and lighting impacts on ecological features. The DEMP requires submission and approval by the LPA prior to decommissioning activities occurring. See **Chapter 4: Proposed Development (ES Volume I, Application Document Ref. 6.1)** for further information.

10.6 Likely impact and effects of the Proposed Development

Overview

- 10.6.1 An assessment of likely impacts and effects on terrestrial ecology is presented within this section, based on the information available at the time of writing regarding the Proposed Development, baseline ecology information and professional judgement.

Construction phase

- 10.6.2 The following likely impacts have been identified during the construction phase:
- habitat loss;
 - habitat disturbance;
 - loss of FLL;

- air pollution;
- dust emissions;
- water pollution.
- artificial lighting; and
- noise and vibration.

Teesmouth and Cleveland Coast SPA and Ramsar

Habitat loss

- 10.6.3 As shown in **Figure 10.2: International Statutory Designated Sites within 15km (ES Volume II, Application Document Ref. 6.2)**, some parts of the Site fall within the boundary of the Teesmouth and Cleveland Coast SPA (12.72 ha, 0.10% of designation). Only 12.20ha will be impacted by the Proposed Development, specifically the proposed quay and associated marine working area, as the other 0.50ha consists of the existing underground River Tees tunnel.
- 10.6.4 Based on currently available information, it is anticipated that habitats at the proposed quay location, above the mean high-water mark, will be permanently lost. These habitats include ‘artificial intertidal structures’, made up of gabion baskets, and ‘developed land’ which are not a qualifying feature and support limited biodiversity value for qualifying features of the designated site (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).
- 10.6.5 Small flocks of herring gull have been recorded using the existing jetties and land adjacent to the north and south as perching locations during the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) and from incidental records by the ECoW during ground investigations. The numbers recorded were below the 1% population threshold and do not constitute a significant proportion of the SPA and Ramsar waterbird assemblage population. It is also likely that herring gull will use the Main Site as an alternative roosting location after construction.
- 10.6.6 As an existing underground tunnel and pipeline crossing will be used for the utility connections crossing the River Tees, with associated works to occur on adjacent land outside the SPA and Ramsar, no significant impacts as a result of habitat loss are anticipated for this location.
- 10.6.7 Therefore, the effects of the Proposed Development relating to habitat loss during the construction phase on the Teesmouth and Cleveland Coast SPA and Ramsar are considered to be **negligible** at an International level and

are **not significant**. Refer to the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

- 10.6.8 Habitat which may be lost in the marine environment is described in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)** and is not repeated here.

Loss of functionally linked land

- 10.6.9 Sections of the Site are located directly adjacent to or within proximity to the Teesmouth and Cleveland Coast SPA and Ramsar, including the Main Site and Wider Site along Dabholm Gut/Cut and therefore may potentially be classified as FLL. During construction at these locations, areas of potential FLL may be permanently or temporarily lost due to habitat loss, loss of sightlines, noise pollution and/or water pollution.
- 10.6.10 Based on the results of the 2025 breeding bird surveys (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) and from incidental records by the ECoW during ground investigations, it is expected that the Proposed Development will not result in the loss of breeding habitat for breeding qualifying features of the Teesmouth and Cleveland Coast SPA and Ramsar as none were recorded on the site.
- 10.6.11 Based on the results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) it is expected that the Proposed Development will result in the loss of overwintering habitat for herring gull, a qualifying feature of the Teesmouth and Cleveland Coast SPA and Ramsar waterbird assemblage. A peak count of 12 herring gull was recorded within the Main Site. However, this is below the 1% population threshold and does not constitute a significant proportion of the SPA and Ramsar waterbird assemblage population for the Main Site to be considered FLL. It is also likely that herring gull will utilise the extensive suitable wintering habitats surrounding the Site after construction as alternative habitat.
- 10.6.12 Therefore, effects of the Proposed Development relating to the loss of FLL (of the Teesmouth and Cleveland Coast SPA and Ramsar) during the construction phase are considered to be **negligible** at an International level and are **not significant**. Refer to the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

Air pollution

- 10.6.13 During the construction phase, local air pollution (oxides of nitrogen (NO_x), ammonia (NH₃), acid deposition, particulates) may be increased by road and sea movements associated with the Proposed Development. These

movements may cause a temporary or permanent impact on habitats within the designated site, causing habitat degradation.

- 10.6.14 Most ecological features are considered to have negligible impacts from construction traffic and plant emissions as the change in air pollutant deposition is below the relevant 1% critical level (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.15 Six air quality ecological receptors located within the Teesmouth and Cleveland Coast SPA and Ramsar (CE001 to CE005 and CE008 in **Figure 8.4: Construction Assessment – Construction Traffic ARN & Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**) will see changes in nitrogen deposition over the critical level. For five of these ecological feature locations, nitrogen deposition was reduced to below the critical load within 60m of the Affected Road Network (ARN) and the one other location (CE002) reduced below the critical load 110m from the ARN. Considering the above, the impacted area within the Teesmouth and Cleveland Coast SPA and Ramsar is considered to be approximately 0.12ha of grazing marsh, reedbed, scrub and open water habitats.
- 10.6.16 Changes in vegetation as a result of deposition impacts are a function of long-term exposure (years/decades) rather than short term exposure. It should be noted that the construction traffic data provided is for 2030, which is the anticipated worst-case year out of the whole four-year construction programme and represents the overall peak activity of the construction period. The construction traffic data used in this assessment is therefore highly conservative (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**); Therefore, given the small area of habitat thought to be potentially adversely impacted (less than 0.12ha) and the short term nature of the exposure using a worse-case scenario, it is considered unlikely that impacts from construction traffic and plant would result in significant impacts.
- 10.6.17 Therefore, the effects of the Proposed Development relating to air pollution on the Teesmouth and Cleveland Coast SPA and Ramsar during the construction phase are considered to be **negligible** at an International level and are **not significant**. Refer to the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

Dust emissions

- 10.6.18 Dust emissions will also increase during construction due to the demolition of existing jetties and general construction activities throughout the Proposed Development. This dust may settle on habitats within the designated sites, smothering vegetation and potentially polluting the soil/vegetation if the dust is contaminated. This may lead to a temporary or

permanent impact on habitats within the designated site, causing habitat degradation (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.19 A worst-case approach was undertaken, as no detailed information is available regarding working practices during construction, which considered that the Teesmouth and Cleveland Coast SPA and Ramsar was at 'high risk' from construction dust impacts and mitigation measures would be required.
- 10.6.20 Embedded mitigation in the form of a DMP will be put in place prior to any construction activities as part of the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.
- 10.6.21 Therefore, with embedded mitigation, the effects of the Proposed Development relating to dust emissions on the Teesmouth and Cleveland Coast SPA and Ramsar during the construction phase are considered to be **negligible** at an International level and are **not significant**. Refer to the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

Water pollution

- 10.6.22 Water pollution may occur during construction as run-off from the Proposed Development into existing watercourses (including the River Tees and those hydrologically connected to it). Pollutants and sediments may be carried within this run-off which may impact the water quality and condition of the waterbodies and other waterbodies/habitats connected to them hydrologically.
- 10.6.23 The water environment impact assessment considered that the qualifying feature habitats of the Teesmouth and Cleveland Coast SPA and Ramsar were at 'high risk' from construction activities and mitigation measures would be required (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.24 Embedded mitigation in the form of a construction drainage strategy will be put in place prior to any construction activities as part of the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.
- 10.6.25 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on the Teesmouth and Cleveland Coast SPA and Ramsar during the construction phase are considered to be **negligible** at an International level and are **not significant**. Refer to the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

Artificial lighting

- 10.6.26 Artificial lighting will be required during construction outside daylight hours or when shading is present. Lighting would be focused on works areas, access routes and laydown areas within the Site. Refer to the **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** for further information. There is the potential that light spill from artificial lighting could impact adjacent habitats and qualifying features of these designated sites.
- 10.6.27 A baseline assessment of lighting conditions within the Site identified it is currently exposed to moderate levels of ambient lighting, categorised as Environmental Zone E3, with greater ambient levels present on the north and east (Seal Sands industrial area and Teesport) with lower ambient levels to the west (RSPB Saltholme) and along the River Tees. This comes from existing lighting infrastructure along roads, buildings and floodlighting across industrial areas (**Appendix 13C: Lighting Strategy, ES Volume III, Application Document Ref. 6.3**).
- 10.6.28 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not already directly subject to artificial lighting, such as the northern and western areas within the Main Site. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.
- 10.6.29 Embedded mitigation in the form of a **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** will be put in place prior to any construction activities.
- 10.6.30 Therefore, with embedded mitigation, it is assumed that the effects of the Proposed Development relating to artificial lighting on the Teesmouth and Cleveland Coast SPA and Ramsar during the construction phase are considered to be **minor adverse** at an international level and are **not significant**. Refer to the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

Noise and vibration

- 10.6.31 Construction activities such as drilling and piling are expected to occur within the Site and lead to an increase in noise and vibration. There is potential that noise breakout from construction areas and laydown areas may spill into adjacent habitats and affect qualifying features of these designated sites.

- 10.6.32 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor, Dabholm Gut and Bran Sands Lagoon (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**), where without additional mitigation (but with embedded mitigation), the noise levels will increase above the screening threshold (55dB LAeq) and experience a change of greater than 3dB above the baseline. This will cause a likely significant effect on ecological features at this receptor.
- 10.6.33 Based on desk study data and the results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) Dabholm Gut and Bran Sands Lagoon are considered to support significant numbers (i.e. over the 1% threshold number), of qualifying features of the SPA and Ramsar; including black-headed gull, common redshank, gadwall, herring gull and lapwing.
- 10.6.34 It is therefore expected that the Proposed Development will result in disturbance to qualifying features of the Teesmouth and Cleveland Coast SPA and Ramsar at these three receptors, potentially degrading the supporting habitats at each receptor during the construction phase of the Proposed Development.
- 10.6.35 Embedded mitigation for noise and vibration is detailed in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.
- 10.6.36 Therefore, with embedded mitigation, the effects of the Proposed Development relating to noise and vibration disturbance on the Teesmouth and Cleveland Coast SPA and Ramsar during the construction phase are considered to be **major adverse** at an international level and are **significant**. Refer to Section 10.7.7 for additional mitigation measures and the HRA for further information (**Report to Inform HRA, Application Document Ref. 5.11**).

Teesmouth and Cleveland Coast SSSI

Habitat loss

- 10.6.37 As shown in **Figure 10.3: National Statutory Designated Sites within 20km (ES Volume II, Application Document Ref. 6.2)**, some parts of the Site fall within the boundary of the Teesmouth and Cleveland Coast SSSI (12.72ha, 0.42% of designation). Only 12.20ha will be impacted by the Proposed Development, specifically the proposed quay and associated marine working area, as the other 0.50ha consists of the existing

underground River Tees tunnel (**Chapter 11: Freshwater and Marine Ecology ES Volume I, Application Document Ref. 6.1**). Based on currently available information, it is anticipated that habitats at the proposed quay location, above the mean high-water mark, will be permanently lost. These habitats include ‘artificial intertidal structures’, made up of gabion baskets, and ‘developed land’ which are not a qualifying feature and support limited biodiversity value for qualifying features of the designated site (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

- 10.6.38 Small flocks of herring gull have been recorded using the existing jetties and land adjacent to the north and south as perching locations during the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) and from incidental records by the ECoW during ground investigations. The numbers recorded were below the 1% population threshold do not constitute a significant proportion of the SSSI waterbird assemblage population. It is also likely that herring gull utilise the proposed quay and/or SAF Production Facility as an alternative perching location after construction.
- 10.6.39 As the existing underground tunnel will be used for the utility connections crossing the River Tees, with associated works to occur on adjacent land outside the SSSI, no habitat loss is anticipated for this location.
- 10.6.40 Therefore, the effects of the Proposed Development relating to habitat loss on the Teesmouth and Cleveland Coast SSSI during the construction phase are considered to be **negligible** at a national level and are **not significant**. Refer to the **SSSI Assessment (Appendix 10G: SSSI Assessment (ES Volume III, Application Document Ref. 6.3))**.
- 10.6.41 Habitat which may be lost in the marine environment is assessed in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)**.

Loss of functionally linked land

- 10.6.42 Sections of the Site are located directly adjacent to or within proximity to the Teesmouth and Cleveland Coast SSSI, including the Main Site and Wider Site along Dabholm Gut/Cut and are potentially FLL. During construction at these locations, areas of potential FLL may be permanently or temporarily lost due to habitat loss, loss of sightlines, noise pollution and/or water pollution.
- 10.6.43 Based on the results of the 2025 breeding bird surveys (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III,**

Application Document Ref. 6.3)) and from incidental records by the ECoW during ground investigations, it is expected that the Proposed Development will result in the permanent and temporary loss of breeding habitat for SSSI scoring species for sand dunes, saltmarsh, lowland open water and their margins such as Cetti's warbler, grasshopper warbler, lapwing, linnet, marsh harrier, oystercatcher, reed bunting, ringed plover, and water rail. This is cautiously assumed to include 4.96ha reedbed, 12.67ha of Open Mosaic Habitat and 7.50ha of sparsely vegetated habitat. It is likely that generalist species such as linnet, grasshopper warbler and reed bunting will utilise the extensive areas of suitable breeding habitats surrounding the Site suitable for these species including scrub, hedgerows and woodland. However, species such as Cetti's warbler, marsh harrier, ringed plover, lapwing and oystercatcher may be adversely impacted to due to a lack of suitable habitat in the surrounding area.

- 10.6.44 Based on the results of the 2025/2026 wintering bird surveys (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3))** it is expected that the Proposed Development will result in the loss of overwintering habitat for herring gull, a qualifying feature of the Teesmouth and Cleveland Coast SSSI waterbird assemblage. A peak count of 12 herring gull was recorded within the Main Site, however this is below the 1% threshold and does not constitute a significant proportion of the SSSI waterbird assemblage population for it to be considered FLL habitat of significant value supporting the SSSI. It is also likely that herring gull will utilise the extensive areas of suitable wintering habitats (in the form of intertidal mudflats etc) surrounding the Site after construction as alternative habitat.
- 10.6.45 Based on the results of the 2025 terrestrial invertebrate surveys it is expected that the Proposed Development will result in the permanent loss of OMH (12.67 ha), reedbed (4.96 ha) and sparsely vegetated habitat (7.50 ha) across the Main Site which supports borough important numbers of grayling butterfly. This is a scoring species for the invertebrate assemblage qualifying feature and therefore these habitats are considered to provide FLH supporting the invertebrate assemblage of the adjacent SSSI (**Appendix 10F: Terrestrial Invertebrates Survey Report (ES Volume III, Application Document Ref. 6.3))**.
- 10.6.46 Therefore, effects of the Proposed Development relating to the loss of FLH (of the Teesmouth and Cleveland Coast SSSI) during the construction phase are considered to be **major adverse** in the absence of additional mitigation at a national level and are **significant**. Refer to the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**. Also refer to Additional mitigation and enhancement measures

(section 10.7) and the Residual effects and conclusion (section 10.8) for further details on how this significant effect will be avoided through mitigation.

Air pollution

- 10.6.47 As both the Teesmouth and Cleveland Coast SPA and Ramsar and Teesmouth and Cleveland Coast SSSI have overlapping geographical extents and qualifying features, the assessment of air pollution related impacts during construction provided for the SPA also applies to the SSSI designated site.
- 10.6.48 Therefore, the effects of the Proposed Development relating to air pollution on the Teesmouth and Cleveland Coast SSSI during the construction phase are considered to be **negligible** at a national level and are **not significant**. Refer to the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.

Dust emissions

- 10.6.49 As they have overlapping geographical extents and qualifying features, the assessment of dust emissions on the Teesmouth and Cleveland Coast SPA and Ramsar applies to the Teesmouth and Cleveland Coast SSSI.
- 10.6.50 Therefore, with embedded mitigation, the effects of the Proposed Development relating to dust emissions on the Teesmouth and Cleveland Coast SSSI during the construction phase are considered to be **negligible** at a national level and are **not significant**. Refer to the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.

Water pollution

- 10.6.51 As they have overlapping geographical extents and qualifying features, the assessment of water pollution on the Teesmouth and Cleveland Coast SPA and Ramsar applies to the Teesmouth and Cleveland Coast SSSI (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.52 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on the Teesmouth and Cleveland Coast SSSI during the construction phase are considered to be **negligible** at a national level and are **not significant**. Refer to the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.

Artificial lighting

- 10.6.53 As they have overlapping geographical extents and qualifying features, the assessment of artificial lighting on the Teesmouth and Cleveland Coast SPA and Ramsar applies to the Teesmouth and Cleveland Coast SSSI.

- 10.6.54 Therefore, with embedded mitigation, it is assumed that the effects of the Proposed Development relating to artificial lighting on the Teesmouth and Cleveland Coast SSSI during the construction phase are considered to be **minor adverse** at a national level and are **not significant**. Refer to the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.

Noise and vibration

- 10.6.55 As they have overlapping geographical extents and qualifying features, the assessment of noise and vibration related impacts on the Teesmouth and Cleveland Coast SPA and Ramsar applies to the Teesmouth and Cleveland Coast SSSI.
- 10.6.56 Therefore, with embedded mitigation, the effects of the Proposed Development relating to noise and vibration disturbance on the Teesmouth and Cleveland Coast SSSI during the construction phase are considered to be **major adverse** at a national level and are **significant** in the absence of additional mitigation. Refer to the **SSSI Assessment (Appendix 10G (ES Volume III, Application Document Ref. 6.3))**.

Teesmouth NNR

Air pollution

- 10.6.57 As they have overlapping geographical extents and qualifying features, the assessment of the Teesmouth and Cleveland Coast SSSI applies to the Teesmouth NNR.
- 10.6.58 Therefore, with embedded mitigation, the effects of the Proposed Development relating to dust emissions on the Teesmouth NNR during the construction phase are considered to be **negligible** at a national level and are **not significant**.

Water pollution

- 10.6.59 As they have overlapping geographical extents and qualifying features, the assessment of the Teesmouth and Cleveland Coast SSSI applies to the Teesmouth NNR (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.60 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on the Teesmouth NNR during the construction phase are considered to be **negligible** at a national level and are **not significant**.

Eston Pumping Station LWS***Habitat loss***

- 10.6.61 As shown in **Figure 10.4: Locally Designated Sites within 2km (ES Volume II, Application Document Ref. 6.2)**, approximately 0.17ha of the Site fall within the boundary of the Eston Pumping Station LWS (7.40% of the designation). This includes use of the existing access road between Bran Sands WwTW and Tees Dock. No construction works are proposed within the designated site, only access for construction vehicles and machinery. It is therefore anticipated that habitats will not be lost on either a permanent or temporary basis within the designated site.
- 10.6.62 Therefore, the effects of the Proposed Development relating to habitat loss on the Eston Pumping Station LWS during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Air pollution

- 10.6.63 Eston Pumping Station LWS is located in proximity to the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI, approximately 460m east. It is therefore considered appropriate that the results of the air quality impact assessment are applied to Eston Pumping Station LWS (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.64 Therefore, the effects of the Proposed Development relating to air pollution on the Eston Pumping Station LWS during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Dust emissions

- 10.6.65 Eston Pumping Station LWS is located in proximity to the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI, approximately 460m east. It is therefore considered appropriate that the results of the air quality impact assessment are applied to Eston Pumping Station LWS (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.66 Therefore, with embedded mitigation, the effects of the Proposed Development relating to dust emissions on the Eston Pumping Station LWS during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Water pollution

- 10.6.67 Eston Pumping Station LWS is located in proximity to the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI, approximately 460m east. It is therefore considered appropriate that the results of the water environment impact assessment are applied to Eston Pumping Station LWS (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.68 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on the Eston Pumping Station LWS during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Habitats of principal importance

Habitat loss

- 10.6.69 Based on currently available information, a worst-case scenario has been assumed where all HoPI within the Main Site (i.e. OMH and reedbed) will be permanently lost.
- 10.6.70 For HoPI across the Wider Site (i.e. Rivers, intertidal mudflats and sheltered muddy gravels), a worst-case approach has been applied where all proposed connection corridor options are constructed. The HoPI are located within the intertidal zone and not within the working areas for the connection corridors. Therefore, they will not be directly impacted by construction activities.
- 10.6.71 Table 10.13 summarises the HoPI impacted by the Proposed Development. Further information on baseline habitats, post-development assumptions and habitats are provided in the Framework BNG Plan (Appendix 5.8A of the **fLBMES (Application Document Ref. 5.8)**).

Table 10.13 Baseline HoPI within the Site impacted by the Proposed Development.

UKHab type	Baseline area (ha)	Post-development area (ha)	Area change (ha)
Reedbeds	6.43	0.00	-6.43
OMH	12.67	0.00	-12.67
Rivers (priority)	12.37	12.37	0.00
Intertidal mudflats	0.08	0.08	0.00
Sheltered muddy gravels	0.05	0.05	0.00
Total	31.60	12.50	-19.10

- 10.6.72 Therefore, the effects of the Proposed Development relating to habitat loss of HoPI during the construction phase are considered to be **moderate adverse** in the absence of additional mitigation at a borough level and are **significant**.

Air pollution

- 10.6.73 HoPI within and adjacent to the Site are susceptible to air pollution increases (e.g. lowland fen and coastal sand dunes). As these susceptible habitats are located within the Teesmouth and Cleveland Coast SSSI, some

are also qualifying features, the results of the air quality impact assessment also apply to the HoPI identified within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.74 Therefore, the effects of the Proposed Development relating to air pollution on HoPI during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Dust emissions

- 10.6.75 HoPI within and adjacent to the Site are susceptible to dust deposition. As these susceptible habitats are located within the Teesmouth and Cleveland Coast SSSI, some are also qualifying features, the results of the air quality impact assessment also apply to the HoPI identified within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.76 Therefore, with embedded mitigation, the effects of the Proposed Development relating to dust emissions on the HoPI during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Water pollution

- 10.6.77 HoPI within and adjacent to the Site are susceptible to water pollution. As these susceptible habitats are located within the Teesmouth and Cleveland Coast SSSI, some are also qualifying features, the results of the water environment impact assessment also apply to the HoPI identified within the Site Zol (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.78 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on the HoPI during the construction phase are considered to be **negligible** at a borough level and are **not significant**.

Other habitats

Habitat loss

- 10.6.79 Based on currently available information, a reasonable worst-case scenario has been assumed where all other habitats within the Main Site are to be lost permanently and replaced with urban habitat.
- 10.6.80 A worst-case approach has also been applied to the Wider Site where all proposed connection corridor options are constructed. All other habitats within the Wider Site are therefore subject to either permanent or temporary loss.

10.6.81 Table 10.14 summarises the other habitats impacted by the Proposed Development. Further information on baseline habitats, post-development assumptions and habitats are provided in the Framework BNG Plan ((Appendix 5.8A of the **fLBMES (Application Document Ref. 5.8)**)).

Table 10.14 Baseline other habitats within the Site impacted by the Proposed Development.

UKHab type	Baseline area (ha)	Post-development area (ha)	Area change (ha)
Bracken	0.27	0.00	-0.27
Other neutral grassland	36.62	1.04	-35.58
Modified grassland	5.01	14.34	9.33
Other sea buckthorn scrub	0.03	0.00	-0.03
Bramble scrub	6.22	3.89	-2.33
Mixed scrub	5.59	0.00	-5.59
Willow scrub	6.30	0.00	-6.30
Other rivers and streams	0.03	0.03	0.00
Other littoral rock	0.57	0.00	-0.57
Buildings	1.03	1.03	0.00
Other developed land	31.49	108.74	77.25
Artificial unvegetated, unsealed surface	15.53	43.08	27.55
Ruderal/ephemeral	2.10	2.10	0.00
Vacant or derelict land	41.68	4.40	-37.28
Other broadleaved woodland	7.06	0.00	-7.06
Urban tree	0.05	0.00	-0.05

10.6.82 Therefore, the effects of the Proposed Development relating to habitat loss of habitats during the construction phase are considered to be **moderate adverse** in absence of additional mitigation at a local level and are **significant**.

Air pollution

10.6.83 Some habitats within and adjacent to the Site are susceptible to air pollution increases. As some of these susceptible habitats are located within or adjacent to the Teesmouth and Cleveland Coast SSSI, the results of the air quality impact assessment also apply to the habitats identified within the

Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.84 Therefore, the effects of the Proposed Development relating to air pollution on other habitats during the construction phase are considered to be **negligible** at a national level and are **not significant**.

Dust emissions

- 10.6.85 Some habitats within and adjacent to the Site are susceptible to dust deposition. As some of these susceptible habitats are located within or adjacent to the Teesmouth and Cleveland Coast SSSI, the results of the air quality impact assessment also apply to the habitats identified within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.86 Therefore, with embedded mitigation, the effects of the Proposed Development relating to dust emissions during the construction phase on other habitats during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Water pollution

- 10.6.87 Some habitats within and adjacent to the Site are susceptible to water pollution. As some of these susceptible habitats are located within or adjacent to the Teesmouth and Cleveland Coast SSSI, the results of the water environment impact assessment also apply to the habitats identified within the Site Zol (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.88 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on other habitats during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Invasive species

Habitat disturbance

- 10.6.89 INNS (e.g. Japanese knotweed and giant hogweed) are present within the Site. During construction, there is the possibility that INNS may be transported within and away from the Site, potentially leading to further spread of INNS.
- 10.6.90 Embedded mitigation in the form of an invasive species management plan will be put in place prior to any construction activities as part of the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.

- 10.6.91 Therefore, with embedded mitigation, the effects of the Proposed Development relating to the habitat disturbance of invasive species are considered to be **minor beneficial** and are **not significant**.

Amphibians

Habitat loss and fragmentation

- 10.6.92 Approximately 30.10ha of suitable terrestrial habitat (reedbed, scrub and grassland) and potential breeding habitat (see waterbodies 32 and 33 in **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development**) for amphibians have been identified within the Main Site. Suitable habitat, including one waterbody (Dorman's Pool, see waterbody 4 in **Figure 10.5: Watercourses and Waterbodies within 250m of the Proposed Development**), was also identified within the Zol.
- 10.6.93 Great crested newt are considered likely to be absent from these habitats, however other notable amphibian species (i.e. common toad) are likely present in low populations. It is therefore considered that significant impacts on amphibians are likely at the local level in the absence of mitigation.
- 10.6.94 Embedded mitigation in **Appendix 5A: fCEMP (ES Volume III, Application Document Ref. 6.3)** includes undertaking vegetation clearance of suitable habitat outside of peak amphibian activity periods where possible (i.e. Avoiding March – June the key breeding/migration period). Where this is not possible, supervised clearance by an ECoW should be implemented for vegetation clearance or works near suitable refugia (e.g. log piles, rubble, dense vegetation) or following fingertip searches, where necessary.
- 10.6.95 Therefore, with embedded mitigation, given the large area of potentially suitable habitat for amphibians being lost the effects of the Proposed Development relating to the habitat loss and fragmentation on amphibians during the construction phase are considered to be **moderate adverse** at the local level and are **significant**.

Air pollution

- 10.6.96 During the construction phase, local air pollution may be increased by road and sea movements associated with the Proposed Development. Amphibians are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.
- 10.6.97 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.98 Therefore, the effects of the Proposed Development relating to air pollution on amphibians during the construction phase are considered to be **negligible** at a local level and **not significant**.

Water pollution

- 10.6.99 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for amphibians.
- 10.6.100 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from construction activities and mitigation measures would be required (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.101 With embedded mitigation, the effects of the Proposed Development relating to water pollution on amphibians during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Artificial lighting

- 10.6.102 Artificial lighting during construction may disturb amphibians which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.103 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the northern and western areas within the Main Site which have been identified as suitable habitat for amphibians. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.
- 10.6.104 Embedded mitigation in the form of a **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** will be put in place prior to any construction activities and include measures that avoid light spill into habitats adjacent to works/laydown areas and access routes.
- 10.6.105 With embedded mitigation, the effects of the Proposed Development relating to artificial lighting on amphibians during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Noise and vibration

- 10.6.106 Construction activities such as drilling and piling may disturb amphibians which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.107 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). None of these receptors have been identified as supporting suitable habitats for amphibians.

10.6.108 With embedded mitigation the effects of the Proposed Development relating to noise and vibration on amphibians during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Bats

Habitat loss and fragmentation

10.6.109 Suitable foraging and commuting habitat for bat species in the form of woodland, scrub and grassland has been identified within the Site and the Zol for bats. No suitable roosting features have been identified within the Site and low activity was recorded across the Main Site.

10.6.110 The Proposed Development will result in the permanent loss of suitable foraging and commuting habitats within the Main Site leading to direct habitat loss and habitat fragmentation for bats. Habitat loss across the Wider Site is expected to be small-scale and temporary, with any natural habitats returned to baseline condition following construction (see further details within the Framework BNG Plan (**Appendix 5.8A to the fLBMES (Application Document Ref. 5.8)**)).

10.6.111 Embedded mitigation in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** includes ensuring ECoW are present to check for any new PRFs prior to construction activities.

10.6.112 With embedded mitigation, the effects of the Proposed Development relating to the habitat loss and fragmentation of bats during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Air pollution

10.6.113 During the construction phase, local air pollution may be increased by road and sea movements associated with the Proposed Development. Bats are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.

10.6.114 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical

level for habitats within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1))**).

10.6.115 Therefore, the effects of the Proposed Development relating to air pollution on bats during the construction phase are considered to be **negligible** at a local level and **not significant**.

Artificial lighting

10.6.116 Artificial lighting use during construction may disturb bats which may avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.117 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the northern and western areas within the Main Site which have been identified as suitable habitat for bats. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.

10.6.118 Embedded mitigation is detailed in **Appendix 5A: fCEMP (ES Volume III, Application Document Ref. 6.3)** and **Appendix 13C: Framework Lighting Strategy (ES Volume III, Application Document Ref. 6.3)**. Mitigation measures within both documents are aligned with Bat Conservation Trust guidance regarding artificial lighting (Ref 63).

10.6.119 Therefore, with embedded mitigation, the effects of the Proposed Development relating to artificial lighting on bats during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Noise and vibration

10.6.120 Construction activities such as drilling and piling may affect bat species which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.121 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). None of these receptors have been identified as supporting suitable habitats for bats.

10.6.122 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on bat species during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Breeding birds

Habitat loss and fragmentation

10.6.123 Suitable habitat for breeding birds in the form of OMH, reedbed, woodland, scrub and grassland has been identified within the Site and the Zol for breeding birds.

10.6.124 The Proposed Development will result in the permanent and temporary loss of suitable breeding bird habitats within the Site leading to direct habitat loss and habitat fragmentation for breeding birds.

10.6.125 Based on the results of the 2025 breeding bird surveys (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III, Application Document Reference 6.3)**), the Proposed Development will result in the loss of breeding habitat for two Schedule 1 species (marsh harrier and Cetti's warbler), nine Teesmouth and Cleveland Coast SSSI scoring species, two locally notable species and nine red list species.

10.6.126 It is likely that generalist species such as linnet, greenfinch and reed bunting will utilise suitable breeding habitats surrounding the Site or within the wider Teesmouth area. However, species such as marsh harrier (qualifying feature of the Teesmouth and Cleveland Coast SSSI and Schedule 1 species) and ringed plover (qualifying feature of the Teesmouth and Cleveland Coast SSSI and Tees Valley BAP species) have the potential to be adversely impacted due to a lack of suitable habitat in the surrounding area.

10.6.127 Therefore, the effects of the Proposed Development relating to the habitat loss and fragmentation of breeding birds during the construction phase are considered to be **major adverse** in the absence of additional mitigation and are **significant** at a national level owing to the loss of breeding habitat for marsh harrier and ringed plover. The loss of breeding bird habitat for all other bird species assemblages that the Site supports is considered to be **negligible** at a borough level and **not significant**.

Air pollution

10.6.128 During the construction phase, local air pollution may be increased by road and sea movements associated with the Proposed Development. Breeding birds are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.

10.6.129 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Proposed Development ZOI (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.130 Therefore, the effects of the Proposed Development relating to air pollution on breeding birds during the construction phase are considered to be **negligible** and are **not significant** at a borough-regional-national-international level.

Artificial lighting

10.6.131 Artificial lighting use during construction may disturb breeding birds which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities. Alternatively, lighting may illuminate nests or provide perches for corvids and raptors increasing the risk of predation.

10.6.132 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the northern and western areas within the Main Site which have been identified as suitable habitat for breeding birds. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.

10.6.133 Embedded mitigation in the form of a **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** and **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** will be put in place prior to any construction activities and include measures that avoid light spill into habitats adjacent to works/laydown areas and access routes.

10.6.134 With embedded mitigation, it is assumed that the effects of the Proposed Development relating to artificial lighting on breeding birds during the construction phase are considered to be **minor adverse** at a borough-regional-national-international level and are **not significant**.

Noise and vibration

10.6.135 Construction activities such as drilling and piling may affect breeding bird species which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.136 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where

the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2))**).

- 10.6.137 Based on desk study data Dabholm Gut and Bran Sands Lagoon are considered to support SSSI scoring breeding assemblage species including curlew, redshank, shelduck and oystercatcher. These locations are not considered to support SPA breeding qualifying feature species based on desk study data.
- 10.6.138 It is therefore expected that the Proposed Development will result in disturbance to scoring assemblage species of the Teesmouth and Cleveland Coast SSSI at these four receptors, potentially degrading the supporting habitats during the construction phase of the Proposed Development.
- 10.6.139 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on breeding birds that are SSSI scoring species during the construction phase are considered to be **major adverse** in the absence of additional mitigation and are **significant** at a national level. The effect of noise and vibration for all other breeding bird species assemblages that the Site supports is considered to be **negligible** at a borough level and **not significant**.

Visual disturbance and loss of sightlines

- 10.6.140 Construction activities will include erecting several buildings and structures ranging from 30m to 140m in height across the Site. This will consist of levelled industrial areas with the tallest features being mature trees or overhead pipelines, there is potential for the construction of buildings and structures to disturb and/or remove existing sightlines which could affect breeding species within and adjacent to the Site which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.141 The sightline disturbance requirements for breeding waders and waterfowl bird species are typically greater than those recorded outside the breeding season, reflecting increased sensitivity during territory establishment, incubation and chick-rearing. Using alert distance and flight initiation distance as a proxy for sightline distance requirements guidance suggests that for breeding waders the minimum sightline distance at which disturbance responses may occur is typically around 100–200m, increasing to a range of approximately 200–500m [Ref 65].

- 10.6.142 Minimum sightline distances for breeding waterfowl are typically in the order of 150–300m, increasing to a range of 300–600m [Ref 66].
- 10.6.143 The only area of suitable breeding habitat within the range of distances for impacts due to loss of sightlines is Dormans Pool. Baseline data and the results of the 2025 breeding bird surveys (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**), only covers the Main Site. However, data from WSP surveys undertaken for a development proposed on a different site in 2022 covers the wider area, including Dormans Pool [Ref 55].
- 10.6.144 The 2022 surveys found Dormans Pool was used for breeding by low numbers of Teesmouth and Cleveland Coast SSSI scoring species such as mute swan (*Cygnus olor*), moorhen (*Gallinula chloropus*), mallard (*Anas platyrhynchos*) and coot (*Fulica atra*). Other Teesmouth and Cleveland Coast SSSI scoring species observed but not confirmed as breeding include low numbers of greylag goose (*Anser anser*), little egret (*Egretta garzetta*), pochard (*Anthya farina*), black-headed gull and herring gull.
- 10.6.145 The species recorded during the 2022 surveys are all common and show high levels of tolerance to disturbance and habituate to it easily. Furthermore, the habitat of Dormans Pool has not changed in the time between 2022 and present so it is unlikely a different breeding bird assemblage is present there now.
- 10.6.146 Generalist and passerine bird species such as linnet, reed bunting, Cetti's warbler and grasshopper warbler will not be impacted by loss of sightlines due to different behaviour and nesting in dense vegetation.
- 10.6.147 Therefore, the effects of the Proposed Development relating to visual disturbance during the construction phase are **minor adverse** at a national and **negligible** at a borough level and are **not significant**.

Wintering birds

Habitat loss and fragmentation

- 10.6.148 Suitable habitat for wintering birds in the form of OMH, reedbed, intertidal mudflat and grassland has been identified within the Site and the Zol for wintering birds.
- 10.6.149 It is expected that the Proposed Development will result in the permanent and temporary loss of suitable habitats within the Site leading to direct habitat loss and habitat fragmentation for wintering birds.
- 10.6.150 Based on the results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) it is expected that the Proposed

Development will result in the loss of overwintering habitat for a qualifying feature of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI waterbird assemblage, herring gull. A peak count of 12 herring gull was recorded within the Main Site however this is below the 1% threshold and does not constitute a significant proportion of the SPA, Ramsar and SSSI waterbird assemblage population for it to be considered FLL. It is also likely that herring gull will utilise suitable wintering habitats on and surrounding the Site after construction.

10.6.151 It is expected that generalist and passerine species such as linnet and fieldfare that were recorded during the 2025/26 wintering bird surveys will be able to utilise habitats such as scrub, hedgerows and woodland in the wider Teesmouth area for foraging and roosting.

10.6.152 Therefore, the effects of the Proposed Development relating to habitat loss and fragmentation on all wintering birds during the construction phase are considered to be **negligible** and are **not significant** at an international/national level.

Air pollution

10.6.153 During the construction phase, local air pollution may be increased by road and sea movements associated with the Proposed Development. Wintering birds are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.

10.6.154 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.155 Therefore, the effects of the Proposed Development relating to air pollution on all wintering birds during the construction phase are considered to be **negligible** and are **not significant** at an international/national level.

Artificial lighting

10.6.156 Artificial lighting during construction may disturb wintering birds which may avoid certain habitats, affecting their feeding, commuting, breeding or other activities.

10.6.157 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the River Tees, which have been identified as suitable habitat for wintering birds. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not

significantly affect the levels of ambient lighting during the construction phase.

10.6.158 Embedded mitigation in the form of a **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** and **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** will be put in place prior to any construction activities and include measures that avoid light spill into habitats adjacent to works/laydown areas and access routes.

10.6.159 With embedded mitigation, the effects of the Proposed Development relating to artificial lighting on all wintering birds during the construction phase are considered to be **minor adverse** and are **not significant** at an international/national level.

Noise and vibration

10.6.160 Construction activities such as drilling and piling may affect wintering bird species which may then avoid certain habitats, affecting their foraging, commuting, roosting or other activities.

10.6.161 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**).

10.6.162 Based on desk study data and the results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) Dabholm Gut and Bran Sands Lagoon are considered to support significant numbers of qualifying features of the SPA, Ramsar and SSSI including black-headed gull, common redshank, gadwall, herring gull and lapwing.

10.6.163 It is therefore expected that the Proposed Development will result in disturbance to qualifying features of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI at these four receptors, potentially degrading the supporting habitats during the construction phase of the Proposed Development.

10.6.164 Embedded mitigation in the form of an extreme cold weather pause on works will implemented within a 200m buffer zone of Bran Sands Lagoon and Dabholm Gut, areas where significant populations of wintering birds are present. This cold weather pause will be implemented between October-March when there are temperatures below 0°C for three consecutive days

then work must cease in the area until at least two days of over 0°C are recorded. This will allow SPA/Ramsar bird species sufficient area to forage for food in frozen ground and avoid starvation and death. Extreme cold weather pauses have been a requirement from Natural England used on comparable projects (see section 10.5 of this chapter for further details and the **fCEMP (Appendix 5A, ES Volume III, Application Document Reference 6.3))**.

- 10.6.165 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on wintering birds that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage during the construction phase are considered to be **major adverse** in the absence of additional mitigation and are **significant** at an international/national level. The effect of noise and vibration for all other wintering bird species assemblages that the Site supports is considered to be **negligible** at a Borough level and **not significant**.

Visual disturbance and loss of sightlines

- 10.6.166 There is potential for the construction of buildings and structures across the Site to disturb and/or remove existing sightlines which could affect wintering species within and adjacent to the Main Site which may then avoid certain habitats, affecting their foraging, commuting, resting or other activities.
- 10.6.167 The sightline distance requirements for wading bird species that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage vary according to species, behaviour, and habitat context, but typically fall within a broad and well-established range. Using alert distance and flight initiation distance as a proxy for sightline distance requirements evidence indicates that the minimum sightline distance at which waders may detect and respond to disturbance is approximately 50–100m in enclosed or vegetated habitats, increasing to a more typical working range of 100–300m for foraging birds in open environments [Ref 65, Ref 66]. During more sensitive activities such as roosting, sightline distances are greater, generally ranging from 150–600m [Ref 65, Ref 66].
- 10.6.168 The sightline distance requirements waterfowl species (including ducks, geese and swans) that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage also vary according to species, behaviour, and habitat context but are well established. Using alert distance and flight initiation distance as a proxy for sightline distance requirements studies show that flight initiation distances average approximately 145m but vary depending on species [Ref 65, Ref 66]. The minimum sightline distance at which birds may detect and respond to disturbance is typically in the order of 100–150m in more enclosed freshwater habitats, increasing to

a range of approximately 150–300m for foraging or loafing birds [Ref 65, Ref 66].

- 10.6.169 The results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) show that the habitats with closest proximity to the Site, such as the “northern parcel” support non-significant counts, less than the 1% threshold, of Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage species.
- 10.6.170 The results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) show that the habitats further from the Site such as RSPB Back Saltholme and Port Clarence Pool, RSPB Saltholme East Pool and Saltholme West Pool and Dormans Pool support significant counts of waterfowl, that are more than the 1% threshold of Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage species. However, these habitats are between approximately 300m and 1.6km from the Site. These distances are beyond the sightline line requirements for wading bird and waterfowl species that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage.
- 10.6.171 Embedded mitigation in the form of an extreme cold weather pause on works will implemented within a 200m buffer zone of Bran Sands Lagoon and Dabholm Gut, areas where significant populations of wintering birds are present. This cold weather pause will be implemented between October-March when there are temperatures below 0°C for three consecutive days then work must cease in the area until at least two days of over 0°C are recorded. This will allow SPA/Ramsar bird species sufficient area to forage for food in frozen ground and avoid starvation and death. Extreme cold weather pauses have been a requirement from Natural England used on comparable projects (see section 10.5 for further details and **fCEMP (Appendix 5A, ES Volume III, Application Document Reference 6.3)**).
- 10.6.172 Therefore, the effects of the Proposed Development relating to visual disturbance during the operational phase are to be **negligible** at an international/national and are **not significant**.

Otter

Habitat loss and fragmentation

- 10.6.173 Otter surveys have identified suitable habitats for commuting and foraging otter along Dabholm Beck/Gut and Bran Sands Lagoon however no field signs, including resting places, have been identified (**Appendix 10E:**

Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)).

10.6.174 It is anticipated that the Proposed Development will result in the temporary loss of potential commuting and resting habitat across the Wider Site, leading to direct habitat loss and habitat fragmentation for otter.

10.6.175 Embedded mitigation in **Appendix 5A: fCEMP (ES Volume III, Application Document Ref. 6.3)** includes ensuring ECoW are present to check for any resting places prior to construction activities.

10.6.176 Therefore, with embedded mitigation, the effects of the Proposed Development relating to the habitat loss and fragmentation of otter during the construction phase are considered to be **minor adverse** and are **not significant** at a local level.

Air pollution

10.6.177 During the construction phase, local air pollution may be increased by increased road and sea movements associated with the Proposed Development. Otter are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.

10.6.178 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.179 Therefore, the effects of the Proposed Development relating to air pollution on otter during the construction phase are considered to be **negligible** and are **not significant** at a local level.

Water pollution

10.6.180 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for otter.

10.6.181 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from construction activities and mitigation measures would be required (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

10.6.182 With embedded mitigation, the effects of the Proposed Development relating to water pollution on otter during the construction phase are considered to be **negligible** and are **not significant** at a local level.

Artificial lighting

- 10.6.183 Artificial lighting using during construction may disturb otter which may avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.184 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the River Tees and south bank of Dabholm Gut, which have been identified as suitable habitat for otter. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.
- 10.6.185 Embedded mitigation in the form of a **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** and **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** will be put in place prior to any construction activities and include measures that avoid light spill into habitats adjacent to works/laydown areas and access routes.
- 10.6.186 With embedded mitigation, the effects of the Proposed Development relating to artificial lighting on otter during the construction phase are considered to be **minor adverse** and are **not significant** at a local level.

Noise and vibration

- 10.6.187 Construction activities such as drilling and piling may affect otter which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.188 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**).
- 10.6.189 Based on desk study data and the results of the 2026 riparian mammal survey (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)**) Dabholm Gut and Bran Sands Lagoon are considered to support otter. It is therefore expected that the Proposed Development will result in disturbance to suitable otter habitat.

10.6.190 With embedded mitigation, it is assumed that the effects of the Proposed Development relating to noise and vibration on otter are considered to be **minor adverse** and are **not significant** at a local level.

Water vole

Habitat loss and fragmentation

10.6.191 Water vole surveys have identified suitable habitats for foraging and burrowing water vole on ditches at the western end of the Wider Site, however no field signs, including burrows, have been identified (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)**). A second presence/absence field survey for water vole is being undertaken in the second half of the survey season (July to September 2026 inclusive) and the results will update the riparian mammal report as appropriate.

10.6.192 With embedded mitigation, the Proposed Development will not directly impact these suitable habitats and therefore no permanent or temporary loss of habitat loss is expected for water vole.

10.6.193 The effects of the Proposed Development relating to the habitat loss and fragmentation on water vole during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Air pollution

10.6.194 During the construction phase, local air pollution may be increased by increased road and sea movements associated with the Proposed Development. Water vole are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.

10.6.195 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Site ZoI (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.196 Therefore, the effects of the Proposed Development relating to air pollution on water vole during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Water pollution

10.6.197 Water pollution of existing watercourses and waterbodies within the ZoI may impact the water quality and therefore suitability of habitats for water vole.

10.6.198 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from construction activities and mitigation measures would be required (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

10.6.199 With embedded mitigation, the effects of the Proposed Development relating to water pollution on water vole during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Artificial lighting

10.6.200 Artificial lighting during construction may disturb water vole which may avoid certain habitats or watercourses, affecting their foraging, commuting, breeding or other activities.

10.6.201 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the western areas within the Main Site however, none of these locations have been identified as suitable habitat for water vole. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.

10.6.202 With embedded mitigation, the effects of the Proposed Development relating to artificial lighting on water vole during the construction phase are considered to be **negligible** at a local level and **are not significant**.

Noise and vibration

10.6.203 Construction activities such as drilling and piling may affect water vole which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.204 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). None of these receptors have been identified as supporting suitable habitats for water vole.

10.6.205 With embedded mitigation the effects of the Proposed Development relating to noise and vibration on water vole during construction are considered to be **negligible** at a local level and are **not significant**.

Other terrestrial mammals

Habitat loss and fragmentation

- 10.6.206 Suitable terrestrial habitat for other terrestrial mammals (namely hedgehog and brown hare) in the form of woodland, scrub and grassland has been identified within the Site and the Zol for terrestrial mammals. No mammal signs were recorded during the PEA although it is assumed they are present across the Site, based on desk study and anecdotal evidence (**Appendix 10A (ES Volume III, Application Document Ref. 6.3)**).
- 10.6.207 It is anticipated that the Proposed Development will result in the permanent and temporary loss of suitable habitats within the Site, leading to direct habitat loss and habitat fragmentation for other terrestrial mammals. It is likely that generalists species will utilise suitable habitats surrounding the Site or within the wider Teesmouth area.
- 10.6.208 Therefore, the effects of the Proposed Development relating to the habitat loss and fragmentation of other terrestrial mammals during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Air pollution

- 10.6.209 During the construction phase, local air pollution may be increased by increased road and sea movements associated with the Proposed Development. Terrestrial mammals are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.
- 10.6.210 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).
- 10.6.211 Therefore, the effects of the Proposed Development relating to air pollution on other terrestrial mammals during the construction phase are considered to be **negligible** at a local level and are **not significant**.

Artificial lighting

- 10.6.212 Artificial lighting used during construction may disturb other terrestrial mammals which may avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.213 With embedded mitigation, the effects of the Proposed Development relating to artificial lighting on other terrestrial mammals during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Noise and vibration

- 10.6.214 Construction activities such as drilling and piling may affect other terrestrial mammals which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.215 The construction noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) identified one ecological receptor where the noise levels will increase above the allowed threshold and likely have significant effects on ecological features (E42 in **Figure 10.6: Locations of Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**)).
- 10.6.216 It is anticipated that the Proposed Development will result in the disturbance other terrestrial mammals at these four receptors, potentially degrading the supporting habitats during the construction phase. It is likely that generalist species will utilise suitable habitats surrounding the Site or within the wider Teesmouth area.
- 10.6.217 Therefore, with embedded mitigation, the effects of the Proposed Development relating to noise and vibration on other terrestrial mammals during the construction phase are considered to be **minor adverse** at a local level and are **not significant**.

Terrestrial invertebrates

Habitat loss and fragmentation

- 10.6.218 Suitable habitat for terrestrial invertebrates in the form of OMH, sparsely vegetated land, woodland, reedbed, scrub and grassland has been identified within the Site and the Zol for terrestrial invertebrates (**Appendix 10F: Terrestrial Invertebrates Survey Report (ES Volume III, Application Document Ref. 6.3)**)).
- 10.6.219 Significant numbers of notable terrestrial invertebrate species were recorded during the invertebrate surveys. This includes dingy skipper and grayling butterfly which were recorded amongst the short grassland within the Main Site and are likely part of the wider metapopulation across the Tees. The grayling butterfly is also a scoring species for the invertebrate assemblage qualifying feature of the Teesmouth and Cleveland Coast SSSI (**Appendix 10F: Terrestrial Invertebrates Survey Report (ES Volume III, Application Document Ref. 6.3)**)).
- 10.6.220 It is anticipated that the Proposed Development will result in the permanent and temporary loss of suitable habitats within the Site, leading to direct habitat loss and habitat fragmentation for terrestrial invertebrates.

10.6.221 It is likely that common species will utilise suitable breeding habitats surrounding the Site or within the wider Teesmouth area. However, without translocation measures, the existing populations of notable terrestrial invertebrates may be lost due to their short range and a lack of suitable habitat in the surrounding area.

10.6.222 Therefore, the effects of the Proposed Development relating to the habitat loss and fragmentation of terrestrial invertebrates during the construction phase are considered to be **major adverse** in absence of additional mitigation at a national level and are **significant**.

Air pollution

10.6.223 During the construction phase, local air pollution may be increased by increased road and sea movements associated with the Proposed Development. Terrestrial invertebrates are not directly sensitive to changes in air pollution but may be indirectly affected by habitat degradation caused by air pollution.

10.6.224 The air quality assessment concluded that ecological features are likely to have negligible impacts as changes in air pollutants are below the critical level for habitats within the Site Zol (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.225 Therefore, the effects of the Proposed Development relating to air pollution on terrestrial invertebrates during the construction phase are considered to be **negligible** at a national level and are **not significant**.

Water pollution

10.6.226 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for terrestrial invertebrates.

10.6.227 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from construction activities and mitigation measures would be required (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

10.6.228 With embedded mitigation, the effects of the Proposed Development relating to water pollution on terrestrial invertebrates during the construction phase are considered to be **negligible** at a national level and are **not significant**.

Artificial lighting

10.6.229 Artificial lighting used during construction may affect terrestrial invertebrates which may avoid certain habitats or attract them to the lit areas, affecting their foraging, commuting, breeding or other activities.

10.6.230 Artificial lighting as a result of the Proposed Development will increase ambient levels in select locations not directly subject to artificial lighting, such as the northern and western areas within the Main Site which have been identified as suitable habitat for terrestrial invertebrates. The **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** states that all artificial lighting will adhere to the recommended thresholds for Zone E3 and therefore not significantly affect the levels of ambient lighting during the construction phase.

10.6.231 With embedded mitigation, the effects of the Proposed Development relating to artificial lighting on terrestrial invertebrates during the construction phase are considered to be **minor adverse** at a national level and are **not significant**.

Operational phase

10.6.232 The following likely impacts have been identified during the operation phase:

- habitat degradation;
- air pollution;
- water pollution.
- artificial lighting;
- noise and vibration; and
- visual disturbance and loss of sightlines.

Teesmouth and Cleveland Coast SPA and Ramsar, SSSI and NNR

Habitat degradation

10.6.233 Embedded mitigation for dust impacts in the form of a DMP will be put in place prior to operation as part of the Proposed Development to avoid any adverse impacts relating to dust.

10.6.234 The construction of structures may lead to shading of habitats within the designated sites which could lead to a temporary or permanent impact on habitats within the designated site, causing habitat degradation. The only infrastructure within the Site likely to impact the designated sites by shading is the proposed quay. This location is already subject to shading effects from the existing jetties and adjacent river frontage along the north bank of the River Tees. All baseline habitats within this location will be lost during the construction of the proposed quay and therefore the only habitat to be potentially impacted by shading effects would be the River Tees. It is

considered unlikely that the proposed quay will result in significantly greater shading effects on the River Tees.

10.6.235 Therefore, with embedded mitigation, the effects of the Proposed Development relating to habitat degradation on the Teesmouth and Cleveland Coast SPA and Ramsar, SSSI and NNR during the operational phase are considered to be **negligible** at an international/national level and are **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)** and **SSSI Assessment (Appendix 10G, ES Volume III, Application Document Ref. 6.3)**.

Air pollution

10.6.236 The air quality assessment concluded for modelled sensitive ecological receptors, all modelled pollutants (NO_x, sulphur dioxide (SO₂), NH₃ and acid deposition) except nutrient nitrogen deposition can be screened out as not significant in line with the EA risk assessment guidance (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.237 The assessment concluded that nitrogen deposition exceeded 1% of the critical load for habitats within the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI so could not be initially screened out of the assessment.

10.6.238 Therefore, the effects of the Proposed Development relating to air pollution on the Teesmouth and Cleveland Coast SPA and Ramsar, SSSI and NNR during the operational phase are considered to be **moderate adverse** in the absence of additional mitigation at an international/national level and are **significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)** and **SSSI Assessment (Appendix 10G, ES Volume III, Application Document Ref. 6.3)**.

Water pollution

10.6.239 Water pollution may occur from operational navigation (including from wave wash disturbing sediment) and maintenance dredging. This may increase the suspension of sediment bound contaminants and lead to habitat degradation within the watercourse and hydrologically connected habitats.

10.6.240 Water pollution may occur during operation as run-off or wastewater from the Proposed Development into existing watercourses/waterbodies. Pollutants and sediments may be carried within this run-off which may impact the water quality of the watercourses and those connected to them hydrologically. Without mitigation, this could cause major impacts to habitats that are vulnerable to water pollution (causing habitat degradation) (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

- 10.6.241 Embedded mitigation includes a surface water drainage system which will incorporate appropriate pollution control and maintenance measures to mitigate the risk of pollution during operation. The operation of the Proposed Development will also include appropriate preventative measures, monitoring and control of environmental risks through the environmental permit which is to be obtained from the EA.
- 10.6.242 Mitigation measures to compensate for additional nutrient emissions to the Tees from Bran Sands WwTW will be in the form of using Northumbrian Water Ltd's proposed LSO, which will redirect treated effluent from Bran Sands WwTW to the North Sea and not the Tees Estuary. The LSO is expected to be operational in 2030 before the Proposed Development operational phase. Refer to **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)** for further information.
- 10.6.243 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution on the Teesmouth and Cleveland Coast SPA and Ramsar, SSSI and NNR during the operational phase are considered to be **minor adverse** at an international/national level and are **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)** and **SSSI Assessment (Appendix 10G, ES Volume III, Application Document Ref. 6.3)**.

Noise and vibration

- 10.6.244 Operational activities from the SAF plant, Combined Heat and Power (CHP) plant, quayside and other machinery within the Main Site are expected to increase noise levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect qualifying feature species of the Teesmouth and Cleveland Coast SPA and Ramsar which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.245 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB L_{Aeq} and experience a change of greater than 3dB above the baseline).
- 10.6.246 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely

the Proposed Development will have significant effects on ecological features.

- 10.6.247 Based on the results of the 2025/2026 wintering bird surveys (**Appendix 10D (ES Volume III, Application Document Ref. 6.3)**) bird usage of the Main Site was low. A peak count of 12 herring gull was recorded within the Main Site however, this is below the 1% threshold and does not constitute a significant proportion of the SPA, Ramsar and SSSI waterbird assemblage population for it to be considered FLL. It is also likely that herring gull are habituated to a level of noise due to the industrial nature of the surrounding habitat and could recolonise less active parts of the Main Site during the operational phase.
- 10.6.248 Small flocks of herring gull have been recorded using the existing jetties and land adjacent to the north and south as perching locations during the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) and from incidental records by the ECoW during ground investigations. This is the location of the proposed quay. The numbers recorded are below the 1% threshold and do not constitute a significant proportion of the SPA, Ramsar and SSSI waterbird assemblage population. It is also likely that herring gull will utilise the Proposed Development as an alternative perching location after construction.
- 10.6.249 Baseline data and the results of the 2025 breeding bird surveys (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**), indicates that a range of notable birds species use the Main Site and quayside to forage and breed. These species will be displaced by the construction of the Proposed Development however generalist species are likely habituated to the industrial area and could recolonise less active parts of the Main Site during the operational phase. Some notable species such as linnet or reed bunting could continue to breed in habitats adjacent to the Main Site and be impacted by noise and vibration
- 10.6.250 Therefore, with embedded mitigation, the effects of the Proposed Development relating to noise and vibration on the on the Teesmouth and Cleveland Coast SPA and Ramsar, SSSI and NNR during the operational phase are considered to be **negligible** at an international/national level and are **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)** and **SSSI Assessment (Appendix 10G, ES Volume III, Application Document Ref. 6.3)**.

Visual disturbance and loss of sightlines

- 10.6.251 Once operational, the Main Site will occupy a large area with several buildings and structures ranging from 30m to 140m in height. This area is currently a levelled industrial area with the tallest features being mature trees or overhead pipelines. There is potential for these buildings and structures to disturb and/or remove existing sightlines which could affect qualifying feature species of the Teesmouth and Cleveland Coast SPA and Ramsar which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.252 The sightline distance requirements for wading bird species that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage vary according to species, behaviour, and habitat context, but typically fall within a broad and well-established range. Using alert distance and flight initiation distance as a proxy for sightline distance evidence indicates that the minimum sightline distance at which waders may detect and respond to disturbance is approximately 50–100m in enclosed or vegetated habitats, increasing to a more typical working range of 100–300m for foraging birds in open environments [Ref 65, Ref 66]. During more sensitive activities such as roosting, sightline distances are greater, generally ranging from 150–600m [Ref 65, Ref 66].
- 10.6.253 The sightline distance requirements waterfowl species (including ducks, geese and swans) that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage also vary according to species, behaviour, and habitat context but are well established. Using alert distance and flight initiation distance as a proxy for sightline distance studies [Ref 65, Ref 67] show that flight initiation distances average approximately 145m but vary depending on species. The minimum sightline distance at which birds may detect and respond to disturbance is typically in the order of 100–150m in more enclosed freshwater habitats, increasing to a range of approximately 150–300m for foraging or loafing birds [Ref 65, Ref 67].
- 10.6.254 The results of the 2025/2026 wintering bird surveys (**Appendix 10D (ES Volume III, Application Document Ref. 6.3)**) show that the habitats with closest proximity to the Site, such as the “northern parcel” support non-significant counts, less than the 1% threshold, of Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage species.
- 10.6.255 The results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) show that the habitats further from the Site such as RSPB Back Saltholme and Port Clarence Pool, RSPB Saltholme East Pool and Saltholme West Pool and Dormans Pool support

significant counts of waterfowl, that are more than the 1% threshold, of Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage species. However, these habitats are between approximately 300m and 1.6km from the Site. These distances are beyond the sightline line requirements for wading bird and waterfowl species that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage.

- 10.6.256 Therefore, the effects of the Proposed Development relating to visual disturbance during the operational phase are to be **negligible** at an international/national and are **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)** and **SSSI Assessment (Appendix 10G, ES Volume III, Application Document Ref. 6.3)**.

North York Moors SPA

Air pollution

- 10.6.257 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that the designated site will not see any air quality changes above the critical level. Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Noise and vibration

- 10.6.258 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect qualifying feature species of the North York Moors SPA and Ramsar which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.259 The North York Moors SPA is designated for breeding bird species, golden plover and merlin. Both species breed in upland moorland.
- 10.6.260 During the breeding season merlin forage over open habitats such as moorland and blanket bog where they hunt small birds, especially meadow pipit. They have a core foraging range during the breeding season of 5km [Ref 64] and the Site is beyond this distance and is not considered to be FLL. As such birds will not be disturb by operational noise whilst on FLL.
- 10.6.261 During the breeding season golden plover have a core foraging area of 3km with a maximum foraging range of 11km [Ref 64]. Golden plover forage during the breeding season in areas of bog, cotton-grass (*Eriophorum*) mires, mosaics of grass, moss and low heather and improved grazed

pastures. The Site does not contain these habitats and is not considered to be FLL. As such birds will not be disturbed by operational noise whilst on FLL.

- 10.6.262 Therefore, the effects of the Proposed Development relating to impacts from noise and vibration during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Visual disturbance and loss of sightlines

- 10.6.263 Once operational, the Main Site will occupy a large area with several buildings and structures ranging from 30m to 140m in height. This area is currently a levelled industrial area with the tallest features being mature trees or overhead pipelines. There is potential for these buildings and structures to disturb and/or remove existing sightlines which could affect qualifying feature species of the Teesmouth and Cleveland Coast SPA and Ramsar which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.264 The North York Moors SPA is designated for breeding bird species, golden plover and merlin. Both species breed in upland moorland.
- 10.6.265 During the breeding season merlin forage over open habitats such as moorland and blanket bog where they hunt small birds, especially meadow pipit. They have a core foraging range during the breeding season of 5km [Ref 64] and the Site is beyond this distance and is not considered to be FLL. As such birds will not be disturbed by operational noise whilst on FLL.
- 10.6.266 During the breeding season golden plovers have a core foraging area of 3km with a maximum foraging range of 11km [Ref 64]. Golden plovers forage during the breeding season in areas of bog, cotton-grass (*Eriophorum*) mires, mosaics of grass, moss and low heather and improved grazed pastures. The Site does not contain these habitats and is not considered to be FLL. As such birds will not be disturbed by operational noise whilst on FLL.
- 10.6.267 Therefore, the effects of the Proposed Development relating to impacts from visual disturbance and loss of sightlines during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

North York Moors SAC

Air pollution

- 10.6.268 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that the designated site will not see any air quality changes above the critical level. Therefore,

the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Northumbria Coast SPA and Ramsar

Air pollution

- 10.6.269 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that the designated site will not see any air quality changes above the critical level. Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Noise and vibration

- 10.6.270 Operational procedures are expected to lead to an increase in noise which could disturb qualifying bird species.
- 10.6.271 Qualifying bird species (arctic tern, little tern, turnstone and purple sandpiper) breed (where applicable) and forage in marine, intertidal and wetland habitats.
- 10.6.272 These species have an expected impact risk zone of ~500m and therefore, the effects of the Proposed Development relating to impacts from noise and vibration during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Visual disturbance and loss of sightlines

- 10.6.273 Once operational, the Main Site will occupy a large area with several buildings and structures ranging from 30m to 140m in height. This area is currently a levelled industrial area with the tallest features being mature trees, in the northern component and landfill area, or overhead pipelines. There is potential for these features to disturb and/or remove existing sightlines which could affect qualifying feature species of the Teesmouth and Cleveland Coast SPA and Ramsar which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.274 Qualifying bird species (arctic tern, little tern, turnstone and purple sandpiper) breed (where applicable) and forage in marine, intertidal and wetland habitats.
- 10.6.275 These species have an expected impact risk zone of ~500m and therefore, it assumed that the effects of the Proposed Development relating to impacts

from visual disturbance during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Durham Coast SAC

Air pollution

10.6.276 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that the designated site will not see any air quality changes above the critical level. Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Castle Eden Dene SAC

Air pollution

10.6.277 Castle Eden Dene SAC has not been subject to a detailed air quality assessment however, all ecological features apart from the Teesmouth and Cleveland Coast SPA, SSSI, Ramsar and Teesmouth NNR will not see any air quality changes above the critical level (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**).

10.6.278 As Castle Eden Dene SAC is located further away from the Site than the assessed sites, it is likely that the Castle Eden Dene SAC will also not see any air quality change above the critical level.

10.6.279 Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** at an international level and **not significant**. Refer to the **Report to Inform HRA (Application Document Ref. 5.11)**.

Saltburn Gill, Briarcroft Pasture, North York Moors and Whitton Bridge Pasture SSSIs

Air pollution

10.6.280 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that the designated sites will not see any air quality changes above the critical level. Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** at a national level and **not significant**.

Durham Coast, Hart Bog, Pike Whin Bog, Hulam Fen, Castle Eden Dene, Pinkney and Gerrick, Fishburn Grassland, Charity Land, Newton Ketton Meadow, Trimdon Limestone Quarry, Wingate Quarry, Railway Stell West and Bishop Middleham Quarry SSSIs

Air pollution

- 10.6.281 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that the designated sites will not see any air quality changes above the critical level. Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **negligible** at a national level and **not significant**. Refer to the **SSSI Assessment (Appendix 10G, ES Volume III, Application Document Ref. 6.3)**.

Habitats of principal importance

Air pollution

- 10.6.282 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted HoPI.
- 10.6.283 The modelled nutrient nitrogen deposition for habitats in the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI is 0.3kgN/ha/yr or 5.1% of the critical load of 5kg N/ha/yr, which would suggest the potential for significant effects without additional mitigation. (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**). However, this only occurs to a limited area of HoPI located within 1km of the Site.
- 10.6.284 Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **minor adverse** at a borough level and are **significant**.

Water pollution

- 10.6.285 Water pollution may occur during operation as run-off or wastewater from the Proposed Development into existing watercourses and waterbodies. Pollutants and sediments may be carried within this run-off which may impact the water quality of the watercourses and those connected to them hydrologically. Without mitigation, this could cause major impacts to habitats that are vulnerable to water pollution (causing habitat degradation).
- 10.6.286 An appropriate surface water drainage system will be implemented that will incorporate appropriate pollution control and maintenance measures to mitigate the risk of pollution during operation as embedded mitigation. The operation of the Proposed Development will also include appropriate

preventative measures, monitoring and control of environmental risks through the environmental permit (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**).

10.6.287 Mitigation measures to compensate for additional nutrient emissions to the Tees from Bran Sands WwTW will be in the form of using Northumbrian Water Ltd's proposed Long Sea Outfall (LSO), which will redirect treated effluent from Bran Sands WwTW to the North Sea and not the Tees Estuary. The LSO is expected to be operational before the Proposed Development in 2031. Refer to **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)** for further information.

10.6.288 Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution during the operational phase are considered to be **minor adverse** at a borough level and **not significant**.

Other habitats

Air pollution

10.6.289 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats.

10.6.290 Therefore, the effects of the Proposed Development relating to air pollution impacts during the operational phase are considered to be **minor adverse** at a local level and are **not significant**.

Water pollution

10.6.291 The water environment impact assessment applied to HoPI also applies to all other habitats (**Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)**). Therefore, with embedded mitigation, the effects of the Proposed Development relating to water pollution during the operational phase are considered to be **minor adverse** at a local level and **not significant**.

Amphibians

Air pollution

10.6.292 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for amphibians.

10.6.293 Therefore, the effects of the Proposed Development relating to air pollution on amphibians during the operational phase are considered to be **negligible** at a local level and **not significant**.

Water pollution

10.6.294 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for amphibians.

10.6.295 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from operational activities and mitigation measures would be required. Refer to **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)** for further information.

10.6.296 With embedded mitigation, the effects of the Proposed Development relating to water pollution during the operational phase are considered to be **minor adverse** at a local level and **not significant**.

Noise and vibration

10.6.297 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect amphibians which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.298 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB LAeq and experience a change of greater than 3dB above the baseline).

10.6.299 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.

10.6.300 Baseline data indicates that amphibians are likely absent from these areas (**Appendix 10A: Preliminary Ecological Appraisal Update (ES Volume III, Application Document Ref. 6.3)**).

10.6.301 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on amphibians during the operational phase are considered to be **negligible** at a local level and **not significant**.

Bats

Air pollution

10.6.302 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for bats.

10.6.303 Therefore, the effects of the Proposed Development relating to air pollution on bats during the operational phase are considered to be **negligible** at a local level and **not significant**.

Noise and vibration

10.6.304 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect bat species which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.305 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB LAeq and experience a change of greater than 3dB above the baseline).

10.6.306 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.

10.6.307 Baseline data indicates there are no PRFs and activity is low to none in these areas (**Appendix 10B: Bat Survey and Acoustic Analysis Report (ES Volume III, Application Document Ref. 6.3)**).

10.6.308 With embedded mitigation, it is assumed that the effects of the Proposed Development relating to noise and vibration on bats during the operational phase are considered to be **negligible** at a local level and **not significant**.

Breeding birds

Air pollution

- 10.6.309 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for breeding birds.
- 10.6.310 Therefore, the effects of the Proposed Development relating to air pollution on breeding birds during the operational phase are considered to be **negligible** at a local-borough-national-international level and **not significant**.

Noise and vibration

- 10.6.311 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect breeding birds which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.312 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB L_{Aeq} and experience a change of greater than 3dB above the baseline).
- 10.6.313 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.
- 10.6.314 Baseline data and the results of the 2025 breeding bird surveys (**Appendix 10C: Breeding Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**), indicates that a range of notable bird species use the Main Site and area where the proposed Quayside will be constructed to forage and breed. These species will be displaced by the construction of the Proposed Development Generalist species are likely habituated to the industrial area and could recolonise less active parts of the Main Site during the operational phase. Some notable species such as linnet or reed bunting (both qualifying species of the Teesmouth and

Cleveland Coast SSSI) could continue to breed in suitable habitats adjacent to the Main Site and therefore be impacted by noise and vibration impacts during operation.

- 10.6.315 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on breeding birds during the operational phase are considered to be **negligible** at a National level and are **not significant**.

Visual disturbance and loss of sightlines

- 10.6.316 Once operational, the Main Site will occupy a large area with several buildings and structures ranging from 30m to 140m in height. There is potential for these buildings and structures to disturb and/or remove existing sightlines which could affect breeding species within and adjacent to the Main Site which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.317 The only area of suitable breeding habitat within the range of distances for impacts due to loss of sightlines is Dormans Pool. Baseline data [Ref 55] found Dormans Pool was used for breeding by low numbers of Teesmouth and Cleveland Coast SSSI scoring species. The species recorded during the 2022 surveys are all common and show high levels of tolerance to disturbance and habituate to it easily. Generalist and passerine bird species will not be impacted by loss of sightlines due to different behaviour and nesting in dense vegetation.
- 10.6.318 Therefore, the effects of the Proposed Development relating to visual disturbance during the operational phase are **minor** at a national and **negligible** at a borough level and are **not significant**.

Wintering birds

Air pollution

- 10.6.319 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for wintering birds.
- 10.6.320 Therefore, the effects of the Proposed Development relating to air pollution on wintering birds during the operational phase are considered to be **negligible** at a local-borough-international level and **not significant**.

Noise and vibration

- 10.6.321 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into

adjacent habitats and affect wintering birds which may then avoid certain habitats, affecting their foraging, commuting, resting or other activities.

- 10.6.322 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB L_{Aeq} and experience a change of greater than 3dB above the baseline).
- 10.6.323 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.
- 10.6.324 Based on the results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) bird usage of the Main Site was low. A peak count of 12 herring gull was recorded within the Main Site however, this is below the 1% threshold and does not constitute a significant proportion of the SPA, Ramsar and SSSI waterbird assemblage population for it to be considered FLL. It is also likely that herring gull are habituated to a level of noise due to the industrial nature of the surrounding habitat and could recolonise less active parts of the Main Site during the operational phase.
- 10.6.325 Small flocks of herring gull have been recorded using the existing jetties and land adjacent to the north and south as perching locations during the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) and from incidental records by the ECoW during ground investigations. This is the location of the proposed quay. The numbers recorded were below the 1% threshold and do not constitute a significant proportion of the SPA, Ramsar and SSSI waterbird assemblage population. It is also likely that herring gull will utilise the Proposed Development as an alternative perching location after construction.
- 10.6.326 Therefore, with embedded mitigation, the effects of the Proposed Development relating to noise and vibration on breeding birds during the operational phase are considered to be **negligible** at an international, national and borough level and are **not significant**.

Visual disturbance and loss of sightlines

- 10.6.327 Once operational, the Main Site will occupy a large area with several buildings and structures ranging from 30m to 140m in height. This area is currently a levelled industrial area with the tallest features being mature trees or overhead pipelines. There is potential for these buildings and structures to disturb and/or remove existing sightlines which could affect wintering species within and adjacent to the Main Site which may then avoid certain habitats, affecting their foraging, commuting, resting or other activities.
- 10.6.328 The sightline distance requirements for wading bird species that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage vary according to species, behaviour, and habitat context, but typically fall within a broad and well-established range. Using alert distance and flight initiation distance as a proxy for sightline distance requirements evidence indicates that the minimum sightline distance at which waders may detect and respond to disturbance is approximately 50–100m in enclosed or vegetated habitats, increasing to a more typical working range of 100–300m for foraging birds in open environments [Ref 65, Ref 66]. During more sensitive activities such as roosting, sightline distances are greater, generally ranging from 150–600m [Ref 65, Ref 66].
- 10.6.329 The sightline distance requirements waterfowl species (including ducks, geese and swans) that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage also vary according to species, behaviour, and habitat context but are well established. Using alert distance and flight initiation distance as a proxy for sightline distance requirements studies [Ref 65, Ref 67] show that flight initiation distances average approximately 145m but vary depending on species. The minimum sightline distance at which birds may detect and respond to disturbance is typically in the order of 100–150m in more enclosed freshwater habitats, increasing to a range of approximately 150–300m for foraging or loafing birds [Ref 65, Ref 67].
- 10.6.330 The results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) show that the habitats with closest proximity to the Site, such as the “northern parcel” support non-significant counts, less than the 1% threshold, of Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage species.
- 10.6.331 The results of the 2025/2026 wintering bird surveys (**Appendix 10D: Wintering Birds Survey Report (Confidential) (ES Volume III, Application Document Ref. 6.3)**) show that the habitats further from the

Site such as RSPB Back Saltholme and Port Clarence Pool, RSPB Saltholme East Pool and Saltholme West Pool and Dormans Pool support significant counts of waterfowl, that are more than the 1% threshold, of Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage species. However, these habitats are between approximately 300m and 1.6km from the Site. These distances are beyond the sightline line requirements for wading bird and waterfowl species that form part of the Teesmouth and Cleveland Coast SPA, Ramsar and SSSI assemblage.

10.6.332 Therefore, the effects of the Proposed Development relating to visual disturbance during the operational phase are to be **negligible** at an international/national and are **not significant**.

Otter

Air pollution

10.6.333 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for otter.

10.6.334 Therefore, the effects of the Proposed Development relating to air pollution on otter during the operational phase are considered to be **negligible** at a local level and **not significant**.

Water pollution

10.6.335 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for otter.

10.6.336 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from operational activities and mitigation measures would be required. Refer to **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)** for further information.

10.6.337 With embedded mitigation, the effects of the Proposed Development relating to water pollution during the operational phase are considered to be **minor adverse** at a local level and **not significant**.

Noise and vibration

10.6.338 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect otter which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

- 10.6.339 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB L_{Aeq} and experience a change of greater than 3dB above the baseline).
- 10.6.340 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.
- 10.6.341 Baseline data indicates that otter are likely present on suitable habitats across the Site including the River Tees and Reclamation Pond (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)**).
- 10.6.342 Therefore, with embedded mitigation, the effects of the Proposed Development relating to noise and vibration on otter during the operational phase are considered to be **negligible** at a local level and are **not significant**.

Water vole

Air pollution

- 10.6.343 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for water vole.
- 10.6.344 Therefore, the effects of the Proposed Development relating to air pollution on water vole during the operational phase are considered to be **negligible** at a local level and **not significant**.

Water pollution

- 10.6.345 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for water vole.
- 10.6.346 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from operational activities and mitigation measures would be required. Refer to **Chapter 12: Water**

Environment (ES Volume I, Application Document Ref. 6.1) for further information.

- 10.6.347 With embedded mitigation, it is assumed that the effects of the Proposed Development relating to water pollution on water vole during the operational phase are considered to be **negligible** at a local level and **not significant**.

Noise and vibration

- 10.6.348 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect water vole which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.
- 10.6.349 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB LAeq and experience a change of greater than 3dB above the baseline).
- 10.6.350 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.
- 10.6.351 Baseline data indicates that water vole are likely absent from these areas (**Appendix 10E: Riparian Mammals Survey Report (ES Volume III, Application Document Ref. 6.3)**).

- 10.6.352 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on water vole during the operational phase are considered to be **negligible** at a local level and are **not significant**.

Other terrestrial mammals

Air pollution

- 10.6.353 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for terrestrial mammals.

10.6.354 Therefore, the effects of the Proposed Development relating to air pollution on terrestrial mammals during the operational phase are considered to be **negligible** at a local level and **not significant**.

Water pollution

10.6.355 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for other terrestrial mammals.

10.6.356 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from operational activities and mitigation measures would be required. Refer to **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)** for further information.

10.6.357 With embedded mitigation, it is assumed that the effects of the Proposed Development relating to water pollution on other terrestrial mammals during the operational phase are considered to be **negligible** at a local level and **not significant**.

Noise and vibration

10.6.358 Operational activities from the SAF plant, quayside and other machinery within the Main Site are expected to increase noise and vibration levels. There is potential that noise breakout from operational areas spill into adjacent habitats and affect other terrestrial mammals which may then avoid certain habitats, affecting their foraging, commuting, breeding or other activities.

10.6.359 The operational noise assessment (**Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, ES Volume III, Application Document Ref. 6.3**) modelled areas where operational noise would exceed the threshold for causing a likely significant effect on ecological features (i.e. noise levels will increase above 55dB L_{Aeq} and experience a change of greater than 3dB above the baseline).

10.6.360 The assessment found that none of the ecological receptors considered beyond the Site would be significantly affected (see **Figure 10.7: Operational Noise Assessment on Terrestrial Ecological Receptors (ES Volume II, Application Document Ref. 6.2)**). The assessment concluded that with embedded mitigation, noise levels do not exceed the allowed threshold at sensitive ecological features and therefore it is unlikely the Proposed Development will have significant effects on ecological features.

10.6.361 It is anticipated that the Proposed Development will result in the disturbance of other terrestrial mammals at these receptors however, it is likely that generalist species will utilise suitable habitats surrounding the Site or within the wider Teesmouth area.

10.6.362 With embedded mitigation, the effects of the Proposed Development relating to noise and vibration on other terrestrial mammals during the operational phase are considered to be **negligible** at a local level and are **not significant**.

Terrestrial invertebrates

Air pollution

10.6.363 The operational air quality assessment (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**) concluded that air quality impacts in relation to NO_x, SO₂ and NH₃ will be below the critical level for the impacted habitats, including those suitable for terrestrial invertebrates.

10.6.364 Therefore, the effects of the Proposed Development relating to air pollution on terrestrial invertebrates during the operational phase are considered to be **negligible** at a national level and **not significant**.

Water pollution

10.6.365 Water pollution of existing watercourses and waterbodies within the Zol may impact the water quality and therefore suitability of habitats for terrestrial invertebrates.

10.6.366 The water environment impact assessment considered that watercourses and waterbodies within the Zol were at 'high risk' from operational activities and mitigation measures would be required. Refer to **Chapter 12: Water Environment (ES Volume I, Application Document Ref. 6.1)** for further information.

10.6.367 With embedded mitigation, the effects of the Proposed Development relating to water pollution on terrestrial invertebrates during the operational phase are considered to be **negligible** at a national level and **not significant**.

Decommissioning phase

10.6.368 The predicted effects of eventual decommissioning of the Proposed Development are considered to be comparable to, or less than, those assessed for construction activities.

10.6.369 This is based upon the assumption that groundwork, traffic movements and site work likely to be required to decommission the Proposed Development would be less than that required for its construction, particularly as no

ground improvement works would be expected to take place during decommissioning of the Proposed Development.

- 10.6.370 Appropriate good industry practice mitigation measures will be applied during any decommissioning works and documented in a DEMP to be secured by a Requirement in the **draft DCO (Application Document Ref 3.1)**; no additional mitigation for decommissioning of the Proposed Development beyond such good industry practice is considered necessary at this stage.

10.7 Additional mitigation and enhancement measures

Overview

- 10.7.1 This section considers any additional mitigation measures which are likely to be required to address significant impacts during both construction and operational phases.
- 10.7.2 Mitigation measures described below are based upon the known ecological baseline, information relating to the Proposed Development, assumed potential impacts resulting from the construction and operation of the Proposed Development at the time of writing, as well as further information being provided from environmental disciplines on which the terrestrial ecology assessment partly relies (i.e. Air Quality, Noise and Vibration, Water Environment, Landscape and Visual).

Construction phase

General construction mitigation

- 10.7.3 Mitigation measures required for the construction phase in relation to potentially impacted ecological features are outlined in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** and will be agreed and committed to as part of the Final CEMP. Ideally vegetation removal and demolition works will be undertaken between late July and September inclusive, to avoid the breeding and over-wintering period for qualifying features of designated sites and other notable species. If works cannot be confined to this period then advice required from a suitably qualified ECoW to determine the required presence of an ECoW and screening measures to mitigate potential impacts.
- 10.7.4 If required, applications will be made for protected species licensing in advance of construction works commencing. Bespoke methodologies will be prescribed within any licence application. Licencing will also prescribe requirements for compensation or features where applicable. However, it should be noted that currently no protected species licences are envisaged as being required based on the surveys undertaken at the Site to date.

Where licensing is not required, precautionary working methods will be employed for works with the potential to impact upon protected/notable species. This includes updated surveys/pre-start checks as appropriate for all protected/notable species that the site may potentially support. Precautionary working methods will be outlined, agreed and committed to as part of the Final CEMP.

- 10.7.5 Where required, off-site compensation and enhancement measures (such as creation of new habitats) will be implemented prior or during the construction phase, as early as practicably possible (Further information on baseline habitats, post-development assumptions and habitats are provided in the Framework BNG Plan (Appendix 5.8A of the **fLBMES (Application Document Ref. 5.8))**).

Mitigation for construction noise and vibration impacts

- 10.7.6 Additional mitigation for construction noise impacts is required to avoid adverse impacts at the one ecological receptor (Dabholm Gut and Bran Sands Lagoon) where noise levels exceed critical thresholds for worst-case terrestrial ecological features (qualifying features of Teesmouth and Cleveland Coast SPA/Ramsar/SSSI, breeding/wintering birds and otter). Refer to **Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, (ES Volume III, Application Document Ref. 6.3)** for further information.
- 10.7.7 Acoustic screening (in line with good industry practice and guidance set out in **Chapter 9: Noise and Vibration (ES Volume I, Application Document Ref. 6.1)**) alongside visual screening will be put in place at each location that requires it during the construction period and can provide up to 10 decibel (dB) reduction in construction noise levels while removing line of sight from the construction activities to the ecological receptors (see Tables 6.2 and 6.3 in **Appendix 10H: Noise and Vibration Assessment for Terrestrial Ecological Receptors, (ES Volume III, Application Document Ref. 6.3)**). The locations that require acoustic and visual screening are along the northern and southern boundaries of the access track on the north bank of Dabholm Gut (see **Figure 10.9: Acoustic Screening (ES Volume II, Application Document Ref. 6.2)**). This will provide acoustic and visual screening from construction works to both Dabholm Gut and Bran Sands Lagoon.
- 10.7.8 With this additional mitigation, noise level changes at the Dabholm Gut and Bran Sands Lagoon are reduced to below 55dB_{L_{Aeq}} at the location of the sensitive ecological features.

Mitigation for loss of habitat

Habitats of principal importance

- 10.7.9 HoPI within the Site (approx. 6.43ha of reedbed and 12.67ha of OMH) will be permanently lost as a result of the Proposed Development (see Table 10.13). Compensatory HoPI will be created offsite as part of the habitat mitigation for the Proposed Development. Further information on habitat creation options can be found in the **fLBMES (Application Document Ref. 5.8)**. The biodiversity unit value of the baseline and compensatory habitats are provided within the Framework BNG Plan (Appendix 5.8A to the **fLBMES (Application Document Ref. 5.8)**).

Other habitats

- 10.7.10 Other habitats within the Site (approx. 99.94ha of bracken, neutral grassland, modified grassland, bramble scrub, mixed scrub, willow scrub, sea buckthorn scrub, littoral rock, vacant/derelict land, broadleaved woodland and urban trees) will be permanently lost as a result of the Proposed Development (see Table 10.14). Compensatory habitat will be created offsite for habitats of medium distinctiveness or higher as part of the habitat mitigation for the Proposed Development. Further information on the habitat creation options can be found in the **fLBMES (Application Document Ref. 5.8)**. The biodiversity unit value of the baseline and compensatory habitats are provided within the Framework BNG Plan (Appendix 5.8A to the **fLBMES (Application Document Ref. 5.8)**).

Amphibian habitat

- 10.7.11 Habitats within the Main Site (approx. 30.10ha consisting of reedbed, scrub and neutral grassland), noted to have suitability for common and notable amphibians such as common toad, will be permanently lost as a result of the Proposed Development. Compensatory habitat will be created offsite for amphibians as part of the habitat mitigation for the Proposed Development. Further information on the habitat creation options can be found in the **fLBMES (Application Document Ref. 5.8)**. The biodiversity unit value of the baseline and compensatory habitats are provided within the Framework BNG Plan (Appendix 5.8A to the **fLBMES (Application Document Ref. 5.8)**).

Mitigation for loss of functionally linked land (birds) and functionally linked habitat (terrestrial invertebrates)

- 10.7.12 Habitats within the Main Site (approx. 4.96ha reedbed, 12.67ha OMH, and 7.50ha vacant/derelict land), assessed as FLL for birds and FLH for terrestrial invertebrates, will be permanently lost as a result of the Proposed Development. Compensatory habitat will be created for the Schedule 1

species (marsh harrier and Cetti's warbler), Teesmouth and Cleveland Coast SSSI assemblage ground nesting bird species (ringed plover, lapwing, oystercatcher and skylark), and notable terrestrial invertebrate species present at the Main Site.

- 10.7.13 The relocation of notable terrestrial invertebrate populations will also be required to mitigate the risk of significantly impacting the wider metapopulation.

Schedule 1 species habitat (Marsh Harrier and Cetti's Warbler)

- 10.7.14 Suitable habitat for marsh harrier and Cetti's warbler breeding within the Main Site consists of approximately 4.96ha of reedbed. Compensatory habitat will be designed to provide at least 4.96ha of functionally equivalent breeding habitat to that lost.
- 10.7.15 The compensatory habitat will comprise a reedbed of dense common reed (*Phragmites australis*) maintained under shallow standing water (typically 10–50 cm) to provide secure nesting conditions from terrestrial predators. A disturbance buffer (c. 200–500 m) will be implemented around nesting areas, with access restrictions during the breeding season. The habitat will be created in advance of impacts (with a lead-in period to allow reedbed establishment) and secured through a long-term management plan, including monitoring of habitat condition and breeding success, with adaptive management measures implemented as necessary to ensure delivery of predicted outcomes.
- 10.7.16 Once the compensatory habitat is established, the existing reedbed will be destroyed outside of the breeding bird season to encourage the marsh harriers to inhabit the compensatory reedbed.
- 10.7.17 In addition to providing habitat for Schedule 1 species, the reedbed will also provide habitat for several other notable and Teesmouth and Cleveland Coast SSSI scoring assemblage bird species (e.g. reed bunting, grasshopper warbler and water rail) and for scarce species of reedbed-dependent invertebrates highlighted in the terrestrial invertebrate survey report (**Appendix 10F: Terrestrial Invertebrates Survey Report, ES Volume III, Application Document Ref. 6.3**).
- 10.7.18 Outline detail regarding the habitat specifications of the reedbed can be found in the **fLBMES (Application Document Ref. 5.8)**.

Notable ground nesting birds and terrestrial invertebrates habitat

- 10.7.19 The habitats within the Main Site supporting notable species of bird and terrestrial invertebrates consists of approximately 12.67ha of OMH and 7.50ha of vacant/derelict land, totalling 20.17ha.

10.7.20 Compensatory habitat for these notable species will comprise the creation of an open, sparsely vegetated habitat including sand, shingle and cobble substrates of at least 20.17 ha. The habitat will maintain a low vegetation cover and a heterogeneous substrate to provide suitable nesting conditions, with sufficient area to support multiple breeding bird territories and avoid fragmentation. Measures will be implemented to minimise disturbance, including seasonal exclusion zones, access management and buffering. Limited shallow ephemeral wet features may be incorporated into the habitat to enhance invertebrate availability for chick foraging; however, the core nesting areas will remain dry, well-drained and free of standing water to maintain optimal breeding conditions and minimise flood and predation risk.

10.7.21 Outline detail regarding the habitat specifications for this mosaic of habitat can be found in the **fLBMES (Application Document Ref. 5.8)**.

Terrestrial invertebrates relocation

10.7.22 Significant numbers of dingy skipper, grayling and small blue butterfly were recorded within select areas of neutral grassland and sparsely vegetated land across the Main Site. Key areas for these species are shown in the terrestrial invertebrate survey report (**Appendix 10F: Terrestrial Invertebrates Survey Report, ES Volume III, Application Document Ref. 6.3**)).

10.7.23 Relocation of these species will involve capturing adult specimens from key areas within the Main Site, prior to any construction activities, and releasing them at nearby receptor sites where suitable habitat is present. This would include areas of neutral grassland with bird's-foot trefoil (*Lotus corniculatus*), fescue grasses and kidney vetch (*Anthyllis vulneraria*) present as they are the larval foodplants for dingy skipper, grayling and small blue respectively.

10.7.24 At least six visits over the normal emergence period for each species will be required to ensure sufficient numbers of both males and females are captured. For dingy skipper and small blue this is mid-May to mid-June and for grayling late-June to late-July.

10.7.25 Further consultation with local invertebrate experts, such as INCA, will be undertaken to determine an appropriate methodology and identify suitable receptor sites. Further information on the relocation measure can be found in the **fLBMES (Application Document Ref. 5.8)**.

Operational phase

Mitigation for operational air quality impacts

- 10.7.26 Due to the use of SNCR/SCR as a form of embedded mitigation, there is the potential for an additional emission of NH₃ slip, which would have the potential to impact sensitive ecological receptors due to an increase in NH₃ emissions and its contribution to nutrient nitrogen deposition. As a result, further abatement in the form of an additional SNCR/SCR and wet scrubbing may be required to reduce the impacts of nutrient nitrogen deposition from the Proposed Development. This will be required on the emissions from the CHP plant stack and the SAF Production Product Pretreatment stack.
- 10.7.27 An additional modelling scenario carried out at the lower NO_x and NH₃ emission concentrations, achievable with this additional mitigation, concluded that the annual mean NO_x Predicted Environmental Concentration (PEC) predicted at the worst-case ecological feature (E001a) was 0.2µg/m³, which represents 0.7% of the Air Quality Assessment Level (AQAL), deemed to be a negligible impact in line with the Environmental Protection United Kingdom/Institute of Air Quality Management (EPUK/IAQM) descriptors. Therefore, the overall effect of annual mean NO_x concentrations in the additional modelling scenario could be screened out as insignificant at all sensitive ecological features.
- 10.7.28 A significant reduction in the nutrient nitrogen deposition PECs was predicted in the additional modelling scenario. At the Best Available Technique-Achievable Emission Level (BAT-AEL), PECs in exceedance of 1% of the relevant lower critical load were predicted for ecological features E001a, E001c, E001d and E001e (Teesmouth and Cleveland Coast). At the lower NO_x and NH₃ emission concentrations, the PECs were below 1% of the relevant critical load at E001c to E001e. The nutrient nitrogen deposition PEC at the worst-case feature E001a was 1.16% of the relevant critical load as shown in Table 8.28 (**Chapter 8: Air Quality (ES Volume I, Application Document Ref. 6.1)**). However, average nutrient nitrogen deposition at this feature over the five-year period (2020 to 2024) was 0.91% of the CL (5kgNha/yr), with the potential for significant effects at the worst-case ecological feature deemed unlikely.

Enhancement measures

- 10.7.29 Habitat enhancement (on/off-site) measures have been set out within the **fLBMES (Application Document Ref. 5.8)** which includes a Framework BNG Plan at Appendix 5.8A.

10.8 Residual effects and conclusions

Overview

- 10.8.1 This chapter presents a summary of the residual effects of the Proposed Development during the construction and operational phases following the implementation of embedded and additional mitigation identified throughout the ES. It draws together the findings of the technical assessments to provide a clear overview of the nature, significance, duration and extent of effects that remain post-mitigation during the construction, operational and, where relevant, decommissioning phases. The chapter is intended to support decision-making by identifying any significant residual effects, confirming the effectiveness of mitigation measures, and highlighting any uncertainties associated with the assessment.

Construction

Noise and vibration

- 10.8.2 With the embedded mitigation (as set out in Section 10.5) and additional mitigation (as set out in Section 10.7) described, potential noise and vibration impacts from the Proposed Development during the construction phase on terrestrial ecological features are considered to be **negligible** and **not significant**.

Habitat loss

- 10.8.3 With the embedded mitigation (Section 10.5) and additional mitigation (Section 10.7) described, potential impacts on terrestrial ecological features from the loss of habitat within the Site during the construction phase are considered to be **negligible** and **not significant**.

Operation

Air quality

- 10.8.4 With the embedded mitigation (Section 10.5) and additional mitigation (Section 10.7) described, potential air quality impacts from the Proposed Development during the operational phase on terrestrial ecological features are considered to be **negligible** and **not significant**.

Decommissioning

- 10.8.5 Consistent with construction mitigation, it has been assumed that relevant good industry practice mitigation measures would be in place during any decommissioning works. No additional mitigation has been identified as necessary for the decommissioning phase of the Proposed Development.

10.9 Summary of significant effects

- 10.9.1 Summaries of the potential significant effects associated with the construction (and decommissioning) of the Proposed Development are presented in Table 10.15.
- 10.9.2 Summaries of the potential significant effects associated with the operation of the Proposed Development are presented in Table 10.16.

Construction phase

Table 10.15 Summary of significant effects for construction phase

Feature	Importance	Potential impact	Likely significant effects (with embedded mitigation)	Additional mitigation	Residual effects
Teesmouth and Cleveland Coast SPA and Ramsar	International	Noise and vibration	Noise and vibration above normal/acceptable levels may cause the designated species to be excluded from suitable habitats adjacent to the Site or cause them to change their behaviours. Major Adverse (significant)	Acoustic screening can provide up to 10 dB(A) reduction in construction noise levels by removing line of sight from the construction activities to features.	Negligible (not significant)
Teesmouth and Cleveland Coast SSSI	National	Loss of FLL	Permanent loss of habitat supporting qualifying features (breeding birds and terrestrial invertebrates) and schedule 1 bird species Major Adverse (significant)	Compensatory habitat creation off-site	Negligible (not significant)
Teesmouth and Cleveland Coast SSSI	National	Noise and vibration	Noise and vibration above normal/acceptable levels may cause the designated species to be excluded from suitable habitats adjacent to the Site or cause them to change their behaviours. Major Adverse (significant)	Acoustic screening can provide up to 10 dB(A) reduction in construction noise levels by removing line of sight from the construction activities to features.	Negligible (not significant)
HoPI	Borough	Habitat loss	Permanent/temporary loss of HoPI Moderate Adverse (significant)	Creation of compensatory OMH and reedbed habitats (or equivalent habitats that	Negligible (not significant)

Feature	Importance	Potential impact	Likely significant effects (with embedded mitigation)	Additional mitigation	Residual effects
				perform a similar function), offsite	
Other Habitats	Local	Habitat loss	Permanent/temporary loss of habitats Moderate Adverse (significant)	Compensatory habitat creation off-site	Negligible (not significant)
Amphibians	Local	Habitat loss and fragmentation	Habitat loss/fragmentation due to the Proposed Development leading to a reduction in habitat available for amphibian species Moderate Adverse (significant)	Compensatory habitat creation off-site	Negligible (not significant)
Breeding Birds	International to Borough	Habitat loss and fragmentation	Habitat loss/fragmentation due to the Proposed Development leading to a reduction in habitat available for the designated species Major Adverse (significant)	Compensatory habitat creation off-site	Negligible (not significant)
Breeding Birds	International to Borough	Noise and vibration	Noise and vibration above normal/acceptable levels may cause the designated species to be excluded from suitable habitats adjacent to the Site or cause them to change their behaviours. Major Adverse (significant)	Acoustic screening can provide up to 10 dB(A) reduction in construction noise levels by removing line of sight from the construction activities to features.	Negligible (not significant)
Wintering Birds	International to Borough	Noise and vibration	Noise and vibration above normal/acceptable levels may cause the designated species to be excluded from suitable habitats adjacent to the Site or	Acoustic screening can provide up to 10 dB(A) reduction in construction noise levels by removing line of sight from the	Negligible (not significant)

Feature	Importance	Potential impact	Likely significant effects (with embedded mitigation)	Additional mitigation	Residual effects
			cause them to change their behaviours. Major Adverse (significant)	construction activities to features.	
Otter	Local	Noise and vibration	Noise and vibration above normal/acceptable levels may cause the designated species to be excluded from suitable habitats adjacent to the Site or cause them to change their behaviours. Minor Adverse (significant)	Acoustic screening can provide up to 10 dB(A) reduction in construction noise levels by removing line of sight from the construction activities to features.	Negligible (not significant)
Terrestrial Invertebrates	National	Habitat loss and fragmentation	Habitat loss/fragmentation due to the Proposed Development leading to a reduction in habitat available for the designated species Major Adverse (significant)	Compensatory habitat creation off-site Translocation of notable species prior to construction	Negligible (not significant)

Operational phase

Table 10.16 Summary of significant effects for operational phase

Feature	Importance	Potential impact	Likely significant effects (with embedded mitigation)	Additional mitigation	Residual effects
Teesmouth and Cleveland Coast SPA and Ramsar	International	Air pollution	Degradation of habitats from air pollution. Moderate Adverse (Significant)	Use of additional abatement (SNCR/SCR) to remove NOx and wet scrubbing to remove NH ₃ from process emissions	Negligible (not significant)
Teesmouth and Cleveland Coast SSSI and NNR	National	Air pollution	Degradation of habitats from air pollution. Moderate Adverse (Significant)	Use of additional abatement (SNCR/SCR) to remove NOx and wet scrubbing to remove NH ₃ from process emissions	Negligible (not significant)
HoPI	National	Air pollution	Degradation of habitats from air pollution. Minor Adverse (Significant)	Use of additional abatement (SNCR/SCR) to remove NOx and wet scrubbing to remove NH ₃ from process emissions	Negligible (not significant)

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