

# Immingham Green Energy Terminal

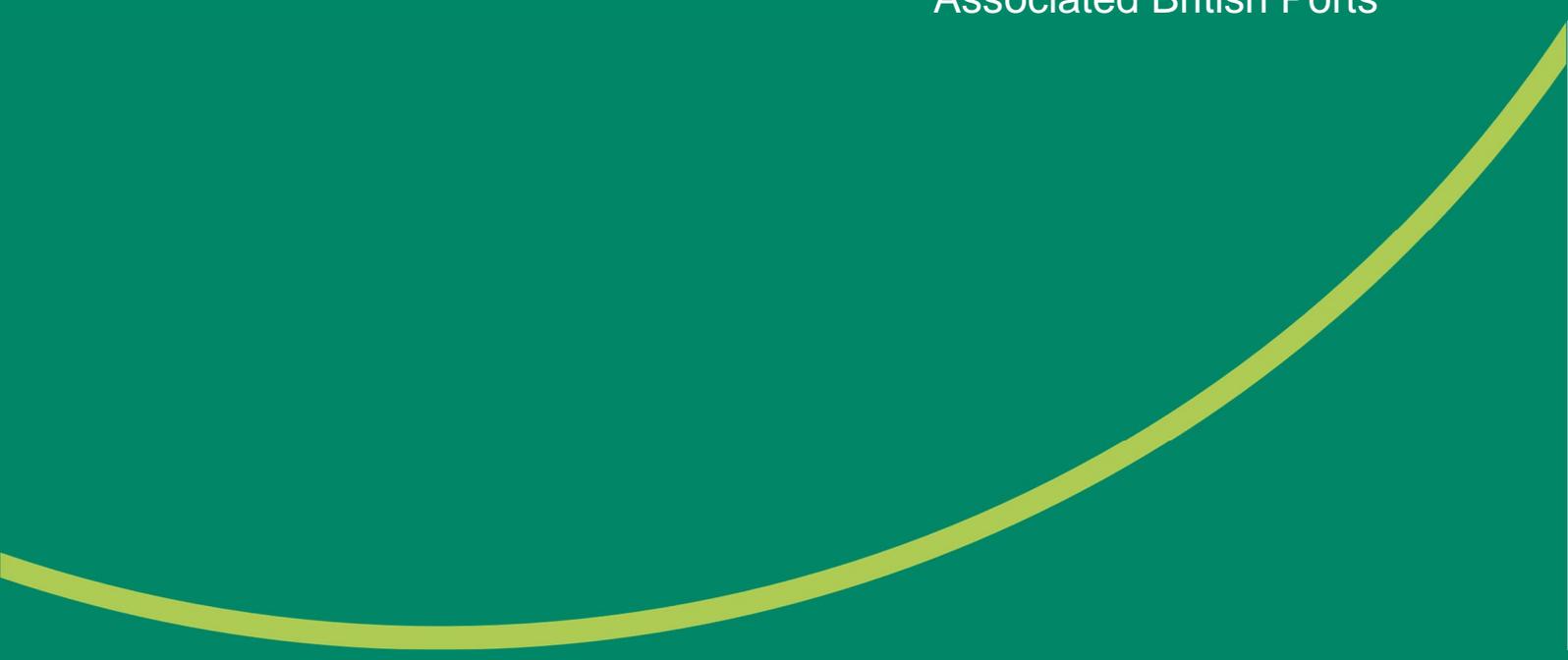
Environmental Impact Assessment

Preliminary Environmental Information Report

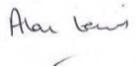
Volume II – Main Report

Chapter 15: Historic Environment (Marine)

Associated British Ports



## Document History

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## 15 Historic Environment (Marine)

### 15.1 Introduction

- 15.1.1 This chapter presents the preliminary findings of the assessment of the likely effects of the Project on the Historic Environment (Marine). For more details about the Project, including construction methodology, layout and life span, refer to **Chapter 2: The Project** of this PEI Report.
- 15.1.2 There may be interrelationships related to the potential effects on Historic Environment (Marine) and other disciplines. Therefore, also refer to the following chapters:
- Chapter 14: Historic Environment (Terrestrial).**
  - Chapter 16: Physical Processes.**
- 15.1.3 This chapter is also supported by the following figure:
- Figure 15.1: Marine Heritage Receptors** (PEI Report, Volume III).

### 15.2 Approach to Assessment

#### Scope

- 15.2.1 A scoping exercise was undertaken in August 2022 to establish the form and nature of the marine historic environment assessment, and the approach and methods to be followed. The Scoping Report records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria being applied in the assessment to identify and evaluate the likely significant effects of the Project on the Historic Environment (Marine) (**Appendix 1.A** (PEI Report, Volume IV)).
- 15.2.2 The report was submitted to the Planning Inspectorate (PINS) with a request for a Scoping Opinion from them on behalf of the Secretary of State.
- 15.2.3 Following receipt of the Scoping Opinion (**Appendix 1.B** (PEI Report, Volume IV)) as to the information to be provided in the Environmental Statement (ES) (see **Table 15.1**), there were no additional requirements identified by the Planning Inspectorate which must be taken into account as part of the ongoing Marine Historic Environment assessment.
- 15.2.4 Having regard to the information presented within the Scoping Report (**Appendix 1.A** (PEI Report, Volume IV)), the Planning Inspectorate's Scoping Opinion (**Appendix 1.B** (PEI Report, Volume IV)) has also confirmed the Applicant's view that significant effects to the setting of marine heritage receptors are unlikely and that impacts on marine archaeology as a result of disposal of dredge arisings are subject to a different regulatory regime. Accordingly, these matters will remain scoped out of consideration in the ES. The scoping responses are set out in **Table 15.1**.

**Table 15.1: Scoping Opinion Comments on Historic Environment (Marine)**

Consultee	Summary of Response	How comments have been addressed in this chapter
Planning Inspectorate	<p>The Scoping Report proposes to scope out impacts to the setting of marine archaeological and cultural heritage receptors, as given the existing industrial character of the Site, the Applicant considers it is unlikely for there to be any material additional impacts on the setting of known and unknown heritage receptors during construction or operation. Given the context of the existing baseline environment, the Inspectorate agrees that significant effects to the setting of marine heritage receptors are unlikely to occur, and this matter can be scoped out.</p>	<p>Noted, the assessment of impacts to the setting of marine heritage receptors is scoped out.</p>
	<p>The Scoping Report proposes to scope out impacts on marine archaeology as a result of disposal of dredge arisings, as this activity would take place at licensed marine disposal sites that have been characterised for this purpose, and any heritage conditions associated with the use of such sites would be adhered to. Given the receiving locations and regulatory regime in place, the Inspectorate agrees that this matter can be scoped out of the ES.</p>	<p>Noted, the impacts on marine archaeology as a result of disposal of dredge arisings are scoped out.</p>
Historic England	<p>We are in general agreement regarding the content of the Scoping Report (AECOM: August 2022) and the areas of the Historic Environment which are to be scoped in and out of the assessment. It is important to make sure that the area of the terrestrial and maritime heritage assessments abut or overlap so that no assets are missed and the setting of assets can be assessed as a whole.</p>	<p>The marine historic environment assessment will assess the impact on heritage receptors up to MHWS (see <b>Paragraph 15.5.1</b>). This will abut the spatial limit of the terrestrial heritage assessment.</p>
	<p>This development could, potentially, have an impact upon a number of designated and un-designated terrestrial and maritime heritage assets and their settings in the area around the site. In line with the advice in the National Planning Policy Framework (NPPF), we would</p>	<p>Response relevant to the terrestrial heritage assessment (refer to <b>Chapter 14: Historic Environment (Terrestrial)</b>).</p>

Consultee	Summary of Response	How comments have been addressed in this chapter
	<p>expect the Environmental Statement to contain a thorough assessment of the likely effects which the proposed development might have upon those elements which contribute to the significance of these assets. Given the heights of the structures associated with the proposed development and the surrounding landscape character, this development is likely to be visible across a very large area and could, as a result, affect the significance of heritage assets at some distance from this site itself. We would expect the assessment to clearly demonstrate that the extent of the proposed study area is of the appropriate size to ensure that all heritage assets likely to be affected by this development have been included and can be properly assessed.</p>	
	<p>It is important that the assessment is designed to ensure that all impacts are fully understood including associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. Section drawings and techniques such as photomontages are a useful part of this. The likelihood of alterations to drainage patterns should also be considered as this may lead to in situ decomposition or destruction of below ground archaeological remains and deposits, and the subsidence of buildings and monuments. We would strongly recommend that you involve the Historic Environment Officers at North and North East Lincolnshire Councils in the development of this assessment. They are best placed to advise on: local historic environment issues and priorities; how the proposal can be tailored to avoid and minimise potential adverse impacts on the historic environment; the nature and design of any required mitigation measures; and opportunities for securing wider benefits for the future conservation and management of heritage assets.</p>	<p>The Historic Environment Officers at North and North East Lincolnshire Councils will be consulted going forward (see <b>Paragraph 15.4.3</b>).</p>

## 15.3 Assessment Method

- 15.3.1 The Environmental Impact Assessment (EIA) documents including the PEI Report will be prepared following standard industry practice and guidance for marine archaeology, including but not limited to the following:
- a. The Assessment and Management of Marine Archaeology in Port and Harbour Development (Ref 15-12);
  - b. Dredging and Port Construction: Interactions with Features of Archaeological or Heritage Interest) (Ref 15-17);
  - c. Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Ref 15-7);
  - d. Our Seas – A Shared Resource: High Level Marine Objectives (Ref 15-2); and
  - e. Ships and Boats: Prehistory to Present: Designation Selection Guide (Ref 15-9).
- 15.3.2 The EIA will follow the methodology set out in **Chapter 5: EIA Approach**.
- 15.3.3 The importance of marine heritage receptors will be established using criteria based on Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Ref 15-7) and Ships and Boats: Prehistory to Present: Designation Selection Guide (Ref 15-9).

### Data and Information Sources

- 15.3.4 Current baseline conditions have been determined by a desk-based review of available information.
- 15.3.5 The main desk-based sources of information that have been reviewed to inform the current baseline description within the vicinity of the Project include:
- a. United Kingdom Hydrographic Office (UKHO) wreck database;
  - b. Historic England's National Record of the Historic Environment (NRHE);
  - c. Various online resources including the British Geological Survey (BGS) Geology of Britain Viewer;
  - d. Historical maps and Ordnance Survey maps;
  - e. Admiralty Charts; and
  - f. Relevant primary and secondary sources in Wessex Archaeology's own library and those available through the Archaeology Data Service and other websites. Both published and unpublished archaeological reports relating to excavations and observations in the area around the study area were reviewed.
- 15.3.2 At present the North East Lincolnshire Historic Environment Records (HER) service is not available to the public at present, however further attempts will be made to acquire these data for the ES.

- 15.3.3 The baseline relating to both seabed prehistory and seabed features such as maritime and aviation receptors, will be developed through future archaeological analysis of datasets such as geophysical and geotechnical survey datasets where relevant and available.
- 15.3.4 An intertidal walkover survey was attempted at low tide on 25<sup>th</sup> October 2022, but unsafe ground conditions prevented access. Alternative approaches are being considered for the ES baseline.

### **Determining Significance of Effects**

#### Receptor Sensitivity

- 15.3.5 In order to assess the potential impacts of a development upon marine cultural heritage, the conceptual approach known as the 'source-pathway-receptor' model is adopted. This approach is based on the identification of the source (i.e. the origin of a potential impact), the pathway (i.e. the means by which the effect of the activity could impact a receptor) and the receptor that may be impacted (e.g. known/potential heritage receptors). For the significance of any given impact to be fully understood and for appropriate mitigation to be proposed, the sensitivity of any marine cultural heritage receptors that may be impacted need to be considered. This section outlines how the sensitivity of marine heritage receptors is ascertained.
- 15.3.6 The capability of a receptor to accommodate change and its ability to recover if affected is a function of its sensitivity. Receptor sensitivity is typically assessed via the following factors:
- Adaptability - the degree to which a receptor can avoid or adapt to an effect;
  - Tolerance - the ability of a receptor to accommodate temporary or permanent change without significant adverse impact;
  - Recoverability - the temporal scale over and extent to which a receptor will recover following an effect; and
  - Value - a measure of the receptor's importance, rarity and worth.
- 15.3.7 Archaeological and cultural heritage receptors cannot typically adapt, tolerate or recover from physical impacts resulting in material damage or loss caused by development. Consequently, the sensitivity of each receptor is predominantly quantified only by its value. In cases where site-specific baseline data is not available, a precautionary approach is typically adopted and potential receptors are considered high sensitivity

#### Value of a Receptor

- 15.3.8 Based on Historic England's Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Ref 15-7), the significance of a historic receptor "embraces all the diverse cultural and natural heritage values that people associate with it, or which prompt them to respond to it".

- 15.3.9 Within this chapter, value is weighed by consideration of the potential for the receptor to demonstrate the following value criteria:
- a. Evidential value – deriving from the potential of a place to yield evidence about past human activity;
  - b. Historical value – deriving from the ways in which past people, events and aspects of life can be connected through a place to the present. It tends to be illustrative or associative;
  - c. Aesthetic value – deriving from the ways in which people draw sensory and intellectual stimulation from a place; and,
  - d. Communal value – deriving from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical (particularly associative) and aesthetic values but tend to have additional and specific aspects.
- 15.3.10 With regards to assessing the value of shipwrecks, the following criteria listed in English Heritage’s Ships and Boats: Prehistory to Present – Designation Selection Guide (Ref 15-9) can be used to assess a receptor in terms of its value:
- a. Period;
  - b. Rarity;
  - c. Documentation;
  - d. Group value;
  - e. Survival/condition; and
  - f. Potential.
- 15.3.11 These aspects help to characterise each receptor whilst also comparing them to other similar receptors. The criteria also enable the potential to contribute to knowledge, understanding and outreach to be assessed.
- 15.3.12 The value of known archaeological and cultural heritage receptors were assessed on a four-point scale using professional judgement informed by criteria provided in **Table 15.2** below.

**Table 15.2: Criteria to assess the archaeological value of marine receptors**

Value	Definition
High	<p>Best known, only example or above average example and / or significant or high potential to contribute to knowledge and understanding and / or outreach. Receptors with a demonstrable international or national dimension to their importance are likely to fall within this category;</p> <ul style="list-style-type: none"> <li>• Wrecked ships and aircraft that are protected under the Protection of Wrecks Act 1973, Ancient Monuments and Archaeological Areas Act 1979 or Protection of Military Remains Act 1986 with an international dimension to their</li> </ul>

Value	Definition
	importance, plus as-yet undesignated sites that are demonstrably of equivalent archaeological value; and <ul style="list-style-type: none"> <li>• Known submerged prehistoric sites and landscapes with the confirmed presence of largely in situ artefactual material or palaeogeographic features with demonstrable potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.</li> </ul>
Medium	Average example and / or moderate potential to contribute to knowledge and understanding and / or outreach; <ul style="list-style-type: none"> <li>• Includes wrecks of ships and aircraft that do not have statutory protection or equivalent significance, but have moderate potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation; and,</li> <li>• Prehistoric deposits with moderate potential to contribute to an understanding of the palaeoenvironment.</li> </ul>
Low	Below average example and / or low potential to contribute to knowledge and understanding and / or outreach; <ul style="list-style-type: none"> <li>• Includes wrecks of ships and aircraft that do not have statutory protection or equivalent significance, but have low potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation; and,</li> <li>• Prehistoric deposits with low potential to contribute to an understanding of the palaeoenvironment.</li> </ul>
Negligible	Poor example and / or little or no potential to contribute to knowledge and understanding and / or outreach. Receptor with little or no surviving archaeological interest.

### Impact Magnitude

15.3.13 The magnitude of an impact is defined by a series of factors including the spatial extent of any interaction, the likelihood, duration, frequency and reversibility of a potential impact. The definitions of the levels of magnitude used in this assessment are described in **Table 15.3**.

**Table 15.3: Classification of magnitude of impact**

Magnitude	Definition
High	Complete or comprehensive physical damage or changes to the character of the receptor
Medium	Considerable changes that affect the character of the receptor, resulting in considerable physical damage

Magnitude	Definition
Low	Minor change that partially affects the character of the receptor, resulting in some physical damage
Negligible	Very minor or negligible change to the character of the receptor, with no or negligible physical damage leading to an imperceptible change to the baseline

### Significance Criteria

15.3.14 The significance of effect will be assessed by comparing the value of the receptor against the magnitude of impact. Residual effects (i.e. those remaining after mitigation measures) have been taken into consideration and have been assessed. The overall significance will be assessed using the significance matrix shown in **Table 15.4**. Any effect that is Moderate, Minor or Negligible is not considered significant in this assessment.

**Table 15.4: Significance matrix**

		Value			
		High	Medium	Low	Negligible
Magnitude/Scale of Change	High	Major	Major to Moderate	Moderate	Negligible
	Medium	Major to Moderate	Moderate	Minor to Moderate	Negligible
	Low	Moderate	Minor to Moderate	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

## 15.4 Legislation, Policy and Guidance

15.4.1 **Table 15.5** presents the legislation, policy and guidance relevant to the marine historic environment assessment and details how their requirements will be met.

**Table 15.5: Relevant legislation, policy and guidance regarding Historic Environment (Marine)**

Legislation / Policy / Guidance	Consideration within the PEI Report
<b>The Marine and Coastal Access Act 2009 (MCAA) (Part 4)</b> (Ref 15-19)	
Part 4 of the Marine and Coastal Access Act 2009 is relevant to marine development within English territorial waters, implementing a requirement for a marine licence for carrying out	Information relevant to the marine licensing process is provided in the PEI Report including initial baseline assessment of the marine historic

Legislation / Policy / Guidance	Consideration within the PEI Report
<p>certain licensable marine activities (see <b>Section 15.8</b>).</p> <p>Whilst the MCAA regulates marine licensing for works at sea, section 149A of the Planning Act 2008 enables an applicant for a Development Consent Order (DCO) to include within the Order a Marine Licence which is deemed to be granted under the provisions of the MCAA.</p>	<p>environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>).</p>
<p><b>Protection of Wrecks Act 1973: Sections 1 and 2 (Ref 15-20)</b></p>	
<p>It is an offence to carry out certain activities in a defined area surrounding a wreck that has been designated, unless a licence for those activities has been obtained from the Government.</p>	<p>There are no protected wrecks within the study area (see <b>Section 15.6</b>).</p>
<p><b>Ancient Monuments and Archaeological Areas Act 1979 Section 2 (Ref 15-21)</b></p>	
<p>It is a criminal offence to carry out any works on, or near to, a Scheduled Monument without Scheduled Monument Consent. Both terrestrial and maritime sites, including wrecks, may be designated under this Act.</p>	<p>There are no scheduled ancient monuments within the study area (see <b>Section 15.6</b>).</p>
<p><b>Protection of Military Remains Act 1986 (Ref 15-22)</b></p>	
<p>This Act provides protection for the wreckage of military aircraft and designated military vessels. The Act provides for two types of protection: 'protected places' and 'controlled sites'. Military aircraft are automatically protected, although vessels have to be specifically designated. The primary reason for designation is to protect as a 'war grave' the last resting place of servicemen; however, the Act does not require the loss of the vessel to have occurred during the war.</p>	<p>There are no protected places or controlled sites within the study area (see <b>Section 15.6</b>).</p>
<p><b>Merchant Shipping Act 1995 (Ref 15-23)</b></p>	
<p>All wreck material recovered from UK waters must be declared to the Receiver of Wreck who acts to settle questions of ownership and salvage. 'Wreck' refers to all items of flotsam, jetsam, derelict, and lagan found in or on the shores of the sea or any tidal water. Any wreck material recovered during the Project will have to be reported to the Receiver of Wreck and stored and disposed of according to their instructions.</p>	<p>Baseline characterisation relevant to the Act is undertaken in the PEI Report (<b>Section 15.3</b>) and in principle mitigation measures, such as a Protocol for Archaeological Discoveries supports the requirements of the Act.</p>
<p><b>Treasure Act 1996 (Ref 15-24)</b></p>	

Legislation / Policy / Guidance	Consideration within the PEI Report
<p>Any material classed as treasure found during the Project must be reported to the Coroner. This includes gold and silver objects, groups of coins, and prehistoric base-metal assemblages. All information required by the Treasure Act (i.e., finder, location, material, date, associated items etc.) will be reported to the coroner within 14 days.</p>	<p>Baseline characterisation relevant to the Act is undertaken in the PEI Report (<b>Section 15.3</b>) and in principle mitigation measures, such as a Protocol for Archaeological Discoveries supports the requirements of the Act.</p>
<p><b>National Policy Statement for Ports (NPSfP) (Ref 15-4)</b></p>	
<p>The NPSfP recognises the importance of the historic environment and that the construction, operation and decommissioning of port infrastructure has the potential to result in adverse impacts on it (Section 5.12.1). Therefore, the significance of heritage assets and the extent of the impact of the proposed development on the significance of any heritage assets has to be understood (Section 5.12.9). Both designated heritage assets and undesignated heritage assets have to be considered, and the setting of a heritage asset also has to be taken into account.</p> <p>The NPSfP advises that the ES should include:</p> <ul style="list-style-type: none"> <li>• a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. As a minimum, the applicant should have consulted the relevant HER and assessed the heritage assets themselves using expertise where necessary according to the proposed development's impact. (Section 5.12.6);</li> <li>• appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation (Section 5.12.7);</li> <li>• consideration of the possibility of damage to buried features from underwater disposal of dredged material (Section 5.12.8); and</li> <li>• an assessment of the extent of the impact of the proposed development on the significance of any heritage assets affected (Section 5.12.9).</li> </ul> <p>The NPSfP also advises that the assessment should take account of other relevant UK policies and plans, including the Marine Policy</p>	<p>Information relevant to the policy is provided in the PEI Report including initial baseline assessment of the marine historic environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>

Legislation / Policy / Guidance	Consideration within the PEI Report
Statement (MPS) and any existing marine plans provided for by the MCAA 2009 (Section 4.1.1).	
<b>National Planning Policy Framework (NPPF)</b> (Ref 15-15)	
<p>As part of the NPPF, a core planning principle is to conserve heritage receptors in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations (Ministry of Housing, Communities and Local Government, 2021). Section 16 of the NPPF, entitled ‘Conserving and enhancing the historic environment’, sets out the principal national guidance on the importance, management and safeguarding of heritage assets within the planning process.</p> <p>The NPPF does not contain specific policies for nationally significant infrastructure projects, but it may be a material consideration in DCO applications (Ref 15-15, para. 5)</p>	<p>Information relevant to the policy is provided in the PEI Report including initial baseline assessment of the marine historic environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>
<b>North East Lincolnshire Local Plan 2013 to 2032</b> (Ref 15-16)	
<p>The North East Lincolnshire Local Plan, adopted in 2018, recognises the significant role the historic environment plays in providing a “sense of community identity and local distinctiveness, and enhance the aesthetic, social and cultural quality of life available to residents” (p. 218).</p> <p>Policy 39 “<i>Conserving and enhancing the historic environment</i>” states that “<i>Proposal for development will be permitted where they would sustain the cultural distinctiveness and significance of North East Lincolnshire’s historic urban, rural and coastal environment by protecting, preserving and, where appropriate, enhancing the character, appearance, significance and historic value of designated and non-designated heritage assets and their settings</i>” (p.220).</p> <p>Furthermore, “<i>Where a development proposal would affect the significance of a heritage assets (whether designated or non-designated), including any contribution made to its setting, it should be informed by proportionate historic environment assessment and evaluations</i>”. This is undertaken by:</p>	<p>Information relevant to the policy is provided in the PEI Report including initial baseline assessment of the marine historic environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>

Legislation / Policy / Guidance	Consideration within the PEI Report
<ul style="list-style-type: none"> <li>• <i>“identifying all heritage assets likely to be affected by the proposal;</i></li> <li>• <i>explain the nature and degree of any effect on elements that contribute to their significance and demonstrating how, in order of preference, any harm will be avoided, minimised, or mitigated;</i></li> <li>• <i>provide a clear explanation and justification for the proposal in order for the harm to be weighed against public benefits; and,</i></li> <li>• <i>demonstrate that all reasonable efforts have been made to sustain the existing use, find new uses, or mitigate the extent of the harm to the significance of the asset; and whether the works proposed are the minimum required to secure the long-term use of the asset.”</i></li> </ul>	
<b>UK Marine Policy Statement (MPS) (Ref 15-13)</b>	
<p>UK Marine Policy Statement (MPS) was adopted by all UK Administrations in March 2011 as part of a new system of marine planning then being introduced across UK seas. The statement facilitates the formulation of Marine Plans, ensuring that marine resources are used in a sustainable way in line with high level marine objectives.</p> <p>Under the MCAA, England was divided into marine planning regions, with an associated authority responsible for preparing a Marine Plan for that area. The MPS sets out the framework for preparing Marine Plans and making decisions affecting the marine environment. The MPS also states that Marine Plans must ensure a sustainable marine environment that will protect heritage receptors. The relevant Marine Plan for the Project is the relevant Marine Plan is the <i>East Inshore Marine Plan</i> (Ref 15-3)</p>	<p>Information relevant to the plan's policy is provided in the PEI Report including initial baseline assessment of the marine historic environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>
<b>East Inshore Marine Plan (Ref 15-3)</b>	
<p>The Marine Management Organisation (MMO) have divided the inshore and offshore waters around England into 11 plan areas for which marine plans are to be produced. The proposed development is within the East Inshore Marine Plan Area which has been adopted as of April 2014.</p>	<p>Information relevant to the plan's policy is provided in the PEI Report including initial baseline assessment of the marine historic environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>

Legislation / Policy / Guidance	Consideration within the PEI Report
<p>The East Inshore Marine Plan Policy SOC2 states that proposals that may affect heritage receptors should demonstrate, in order of preference:</p> <ul style="list-style-type: none"> <li>• that they will not compromise or harm elements which contribute to the significance of the heritage asset;</li> <li>• how, if there is compromise or harm to a heritage asset, this will be minimised;</li> <li>• how, where compromise or harm to a heritage asset cannot be minimised, it will be mitigated against; or</li> <li>• the public benefits for proceeding with the proposal if it is not possible to minimise or mitigate or compromise the harm to the heritage asset.</li> </ul>	
<b>Managing Lithic Scatters: Archaeological Guidance for planning authorities and developers (Ref 15-5)</b>	
<p>Guidance for planning authorities and developers in case of the discovery of archaeologically significant lithic material.</p>	<p>Assessment has been undertaken following guidance note.</p>
<b>Military Aircraft Crash Sites: Guidance on their significance and future management (Ref 15-6)</b>	
<p>This provides archaeological guidance regarding the significance and future management of military aircraft crash sites. It outlines the importance of aircraft crash sites and indicates that they should be considered where they are affected by development proposals.</p>	<p>Assessment has been undertaken following guidance note (<b>Section 15.3</b>)</p>
<b>The Code of Practice for Seabed Developers (Ref 15-14)</b>	
<p>This voluntary code provides a framework for seabed developers similar to the principles found in current policy and practice on land. The aim of the Code is to ensure a best practice model for seabed development. The Code offers guidance to developers on issues such as risk management and legislative implications.</p>	<p>Information relevant to the guidance note is provided in the PEI Report including assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>
<b>Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Ref 15-7)</b>	

Legislation / Policy / Guidance	Consideration within the PEI Report
<p>This document aims to support best practice and decision-making for managing aspects of the historic environment.</p>	<p>Information relevant to the guidance note is provided in the PEI Report including assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>
<p><b>Our Seas – A shared resource: High level marine objectives</b> (Ref 15-2)</p>	
<p>A set of objectives agreed by the UK Government, Northern Ireland Executive and Welsh Assembly Government in order to achieve desirable outcomes for the UK marine area as a whole.</p>	<p>Information relevant to the guidance note is provided in the PEI Report including initial baseline assessment of the marine historic environment (<b>Section 15.3</b>) and a preliminary assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>
<p><b>Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation</b> (Ref 15-8)</p>	
<p>This document provides guidance for good practice in environmental archaeology, and advice on the applications and methods of environmental archaeology within archaeological projects.</p>	<p>Information relevant to the guidance note is provided in the PEI Report including assessment of potential impacts (<b>Section 15.5</b>) and mitigation (<b>Section 15.6</b>).</p>
<p><b>Ships and Boats: Prehistory to Present: Designation Selection Guide</b> (Ref 15-9)</p>	
<p>This guide outlines the selection criteria used when designating ships and boats that are part of the archaeological resource.</p>	<p>Assessment undertaken following guidance note (<b>Section 15.2</b> and <b>Section 15.3</b>).</p>
<p><b>Standard and Guidance for Historic Environment Desk-based Assessment</b> (Ref 15-1)</p>	
<p>This guidance seeks to define good practice for the execution and reporting of desk-based assessment, in line with the by-laws of the Chartered Institute for Archaeologists. The standard and guidance was formally adopted as approved practice at the Annual General Meeting of the Institute held on 14 October 1994. This revision recognises the new Chartered status of the Institute.</p>	<p>Assessment undertaken following guidance note (<b>Section 15.2</b> and <b>Section 15.3</b>).</p>
<p><b>Marine Geophysics Data Acquisition, Processing and Interpretation Guidance Notes</b> (Ref 15-10)</p>	
<p>These notes were prepared as part of the Aggregates Levy Sustainability Fund's (ALSF) dissemination of heritage information, based on the assessment of a number of ALSF projects. It provides basic information for the characterisation of wreck sites and submerged prehistoric landscapes.</p>	<p>Information relevant to the guidance note is provided in the PEI Report including design, mitigation and enhancement measures (<b>Section 15.4</b>).</p>

Legislation / Policy / Guidance	Consideration within the PEI Report
<b>Dredging and Port Construction: Interaction with Features of Archaeological or Heritage Interest</b> (Ref 15-17)	
This guidance document is intended to promote the development of good practice for dredging and port construction in relation to underwater cultural heritage.	Information relevant to the guidance note is provided in the PEI Report including assessment of potential impacts ( <b>Section 15.5</b> ) and mitigation ( <b>Section 15.6</b> ).
<b>Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record</b> (Ref 15-11)	
This guidance covers the use of geoarchaeology in understanding the archaeological record.	Information relevant to the guidance note is provided in the PEI Report including design, mitigation and enhancement measures ( <b>Section 15.4</b> )
<b>The Assessment and Management of Marine Archaeology in Port and Harbour Development</b> (Ref 15-12)	
This guidance provides practical advice on assessing the impact of port and harbour development in England upon the intertidal and marine historic environment. It is relevant to port and harbour owners, operators, developers and contractors, regulatory authorities, curators, archaeological consultants/contractors and other stakeholders. The document aims particularly at providing advice for environmental assessments required for new development projects, it does not address routine port operations or activities covered under existing Harbour Orders.	Information relevant to the guidance note is provided in the PEI Report including initial baseline assessment of the marine historic environment ( <b>Section 15.3</b> ) and a preliminary assessment of potential impacts ( <b>Section 15.5</b> ) and mitigation ( <b>Section 15.6</b> ).

### Stakeholder Engagement

- 15.4.2 A range of stakeholders have been engaged as part of the scoping process to obtain their views on the Project and the scope of the Historic Environment (Marine) assessment, the results of which are presented within the Scoping Opinion (**Appendix 1.B** (PEI Report, Volume IV)).
- 15.4.3 Key consultees for marine archaeology include Historic England (HE) and North East Lincolnshire Council (NELC).
- 15.4.4 Historic England provided a Scoping response to PINS within the statutory deadline. Further engagement with statutory and non-statutory stakeholders will be carried out prior to submission of the DCO Application.

### Limitations and Assumptions

- 15.4.5 The information presented in this preliminary assessment reflects that obtained and evaluated at the time of reporting. It is based on an emerging design for the

Project and the maximum spatial extent required for its construction and operation.

- 15.4.6 The findings of this preliminary assessment may be subject to change as the design of the Project is developed and refined further; through the assessment and consultation processes; and, as further research and investigative surveys are completed to fully understand its potential effects.
- 15.4.7 The assessment has been undertaken based on the following assumptions:
- Data used to compile this report consists of secondary information derived from a variety of sources as detailed in **Section 15.2**. The assumption is made that the secondary data, as well as that derived from other secondary sources, are reasonably accurate.
  - The records held by the UKHO, NRHE, local HERs and the other sources used in this assessment are not a record of all surviving cultural heritage receptors, rather a record of the discovery of a wide range of archaeological and historical components of the marine historic environment. The information held within these sources does not inhibit the subsequent discovery of historic environment receptors that are, at present, unknown.

## 15.5 Study Area

- 15.5.1 The study area is the area over which potential direct and indirect effects of the Project that may occur during construction and operation. Direct effects on marine heritage receptors are confined to within the footprint of the Project i.e. the construction works and dredging. Indirect effects are those that may arise due to wider changes in the estuary flow and sedimentary regime and any change to the estuary morphology as a result of the Project.
- 15.5.2 The study area for the marine archaeology topic will comprise the footprint of the marine works associated with the Project and a 2 km buffer zone. This will be used to capture relevant data on designated and non-designated marine archaeological receptors that may be impacted by the Project, and to provide the necessary context for understanding archaeological potential and heritage significance of the relevant receptors.

## 15.6 Baseline Conditions

### Current Baseline

- 15.6.1 This section describes the baseline environmental characteristics within the study area with specific reference to marine heritage and marine archaeology.

### Marine Heritage Receptors

- 15.6.2 Marine archaeological and cultural heritage receptors located within the study area can be characterised as comprising four fundamental categories:
- Seabed prehistory.
  - Maritime archaeology
  - Aviation archaeology.

d. Intertidal heritage receptors.

Seabed Prehistory

- 15.6.3 The underlying solid geology is Upper Cretaceous Chalk. Locally there are two formations: Flamborough Chalk and Burnham Chalk. The younger Flamborough Chalk has identifiable bedding surfaces, distinct marl bands and is without flint. The underlying Burnham Chalk, along the eastern part of the Site, is thinly bedded and laminated and contains continuous flint bands. The Port of Immingham is located at a point where the Burnham Chalk Formation is not covered by the Flamborough Chalk Formation.
- 15.6.4 The chalk surface is characterised by a highly fractured zone created by glacial and periglacial processes, and overlain by Pleistocene deposits of Glacial Till. These glacial and post-glacial sequences are subsequently overlain by fine-grained (Clay and Silt) Tidal Flat Deposits.
- 15.6.5 Beyond areas of industrial development, the area comprises Holocene peats, estuarine alluvium, and tidal flat deposits of sands, silts, and clays.

Maritime, Aviation and Intertidal Archaeology

- 15.6.6 The marine archaeological and cultural heritage receptors listed in the NRHE and the UKHO wreck database that are located within the study area are listed in **Table 15.6** shown on **Figure 15.1** (PEI Report, Volume III). The section below presents a summary of the baseline.

**Table 15.6: Marine Heritage Features**

WA ID	External References	Type	Description	Easting	Northing
2001	8508	Mound/Foul ground	A submerged obstruction that was struck by a vessel in 1957. Measured 17.5m by 10.7m and 1m in height. Amended 'dead', i.e. not been observed in repeated surveys, in 2013.	521230	416776
2002	65126	Obstruction	Octagonal obstruction shown on aerial photography.	520765	415966
2003	8505	Dolphin/Foul ground	Remains of a Dolphin damaged or destroyed in 1973 following a collision. Dispersed to seabed level in 1984.	520884	416595
2004	65124	Obstruction	Rectangular obstruction shown on aerial photography	520824	415903

WA ID	External References	Type	Description	Easting	Northing
2005	65128	Obstruction	Octagonal obstruction shown on aerial photography.	520826	415994
2006	8506	Foul ground	Has been lifted.	523601	416697
2007	67016	Dolphins/Poles/ Posts/Piles	Lifted in 1975.	520920	416596
2008	65127	Obstruction	Octagonal obstruction shown on aerial photography.	520788	416015
2009	65125	Obstruction	Cigar shaped obstruction shown on aerial photography.	520833	415905
2010	8576	Wreck	Possible remains of craft recorded between 1991 and 1999. No details are known and it was listed as dead in 2004.	520808	415999
2011	61506	Obstructions	Pipes/Tubes/Diffusers	522245	415235
2012	79895	Foul ground	Observed in bathymetry in 2013. Measures 2 x 1 m with a height of 0.5m.	521181	416806
2013	8509	Wreck	Wreck of <i>Goldbell</i> . Has been lifted.	524055	416924
2014	8507	Wreck	A sailing vessel, <i>Hvitveis</i> , with auxiliary oil engine that sunk with a cargo of coal in 1915.	522073	416696
2015	98703	Wreck	Unknown wreck shown in ABP Humber survey in 2021.	523985	415716
2016	73629	Wreck	Shown on Humber 8, April 2009 Edition.	520832	416009
2017	66974	Wreck	A light float (No. 9 (Clay Huts) Light Float) that was lifted in 1929.	521037	417063
2018	61507	Obstructions	Pipes/Tubes/Diffusers	524376.51	415045.6
2019	61508	Obstructions	Pipes/Tubes/Diffusers	524311.29	414925.14

WA ID	External References	Type	Description	Easting	Northing
2020	8570	Wreck	Remains of a wooden wreck first discovered in 1985. Measures 27 x 8 x 2.2 m.	524805.16	415312.96
WA = Wessex Archaeology					

- 15.6.7 Maritime archaeological sites can be considered to comprise two broad categories;
- a. The remains of vessels that have been lost as a result of stranding, foundering, collision, enemy action and other causes, and
  - b. hose sites that consist of vessel-related material.
- 15.6.8 Vessel-related material includes (but is not limited to) equipment lost overboard or deliberately jettisoned, such as fishing gear, ammunition and anchors or the only surviving remains of a vessel such as its cargo or a ballast mound. Shipwrecks on the seabed provide an insight on the types of vessels used in the past, the nature of shipping activity in the wider area and the changing usage of the marine environment through different periods. Such remains are considered more likely in sediments which promote the preservation of wreck sites (e.g. finer grained sediments that are not subject to high levels of mobility), particularly where such sediments have seen limited, recent disturbance.
- 15.6.9 There are no sites within the study area that are subject to statutory protection from the Protection of Wrecks Act 1973, the Protection of Military Remains Act 1986 or the Ancient Monuments and Archaeological Areas Act 1979; the three principal statutes that could be used to protect marine archaeological sites.
- 15.6.10 There are seven records of wrecks in the defined study area. WA 2014, 2015, 2016 and 2020 are wrecks still considered to be located on the seabed. WA 2010 was a wreck that was listed as dead in 2004 i.e. it has not been detected by repeated surveys, although wreck material may still exist at this location. WA 2013 and 2017 are wrecks which have been lifted, and therefore there is possibly no wreck material remaining at these locations, although some debris may remain. Most of these wrecks date to the 20th century, although some are unknown wrecks which may date to other periods. There is the potential for further unknown wreck material to exist.
- 15.6.11 However, the Port of Immingham was constructed in the early 20th century. This suggests that there is lower potential for pre-20th century wreck material to survive within the Project area, both due to a relatively smaller level of maritime activity prior to the construction of the Port and due to the extensive dredging that has taken place on the adjacent seabed both during construction and since.
- 15.6.12 Intertidal features located below mean high water springs (MHWS) and above mean low water springs (MLWS) comprise 'obstructions' (WA 2002, 2004, 2009) with other examples located adjacently in the river (WA 2005, 2008, 2018, 2019) (**Figure 15.1** (PEI Report, Volume III)).

- 15.6.13 A variety of other records of ‘foul ground’ are noted further out into the river also recording dolphins and large debris from 20th century port activity (WA 2001, 2003, 2007) (**Figure 15.1** (PEI Report, Volume III)).
- 15.6.14 There are also a number of anomalies in the area that are as yet unidentified. WA 2012 is an anomaly that was observed in bathymetry in 2013 and measures 2 m by 1 m with a height of 0.5 m. WA 2001 consists of a submerged obstruction that was struck by a vessel in 1957. This measured 17.5 m by 10.7 m with 1 m in height, but was amended to dead in 2013, although material may still exist at this location. Further obstructions include WA 2006 and 2011.
- 15.6.15 Marine aviation archaeology receptors comprise the remains or associated remains of military and civilian aircraft that have been lost at sea. Evidence is divided into three primary time periods based on major technological advances in aircraft design, namely: pre-1939; 1939-1945; and post-1945. Although there are currently no known aircraft crash sites located within the study area, there is the potential for the discovery of previously unknown aircraft material. There is particularly high potential for the discovery of aircraft from 1939-1945. There were numerous airfields and local anti-aircraft installations in the vicinity of the Project during the Second World War, with Royal Air Force (RAF) Goxhill and RAF North Killingholme being particularly proximate. Further, the RAF Air Sea Rescue Services are known to have attempted numerous rescues of aircrew from crashed aircraft in the Humber Estuary during the Second World War (Ref 15-18). The remains of crashed military aircraft are protected under the Protection of Military Remains Act 1986 and cannot be disturbed without a licence.

### **Future Baseline**

- 15.6.16 In the absence of the Project there would be no change to known and potential archaeological marine heritage receptors beyond those caused by natural physical processes and natural deterioration. Physical effects to marine receptors are considered below in terms of likely impacts and effects.

## **15.7 Design, Mitigation and Enhancement Measures**

### **Embedded Mitigation Measures**

- 15.7.1 The Project has been designed, as far as possible, to avoid and minimise impacts and effects to population and health through the process of design development, and by embedding mitigation measures into the design.

### **Standard Mitigation Measures**

- 15.7.2 The following mitigation measures are being considered as part of the design development of the Project:
- a. Avoidance of known marine cultural heritage receptors (e.g. Archaeological Exclusion Zones).
  - b. Geoarchaeological and Geophysical data assessment for baseline enhancement.

c. Protocol for Archaeological Discoveries.

Archaeological Exclusion Zones

- 15.7.3 The primary mitigation for the protection of known archaeological receptors is avoidance. This is commonly achieved through the implementation and monitoring of Archaeological Exclusion Zones (AEZs), which are proposed for identified high value seabed receptors of anthropogenic origin (i.e. A1 classified geophysical anomalies).
- 15.7.4 The Assessment and Management of Marine Archaeology in Port and Harbour Development (Ref 15-12) states that AEZs are formed by establishing a buffer around the known extents of sites for which the available evidence suggest that there could be archaeological material present on the seabed. The mitigation will establish appropriately sized AEZs around receptors which have been considered to be of high archaeological potential, in consultation with the Archaeological Curators (Historic England). These areas would be out of bounds to construction activities and to anchoring. Monitoring of any AEZs to ensure there is no disturbance to them would be part of this mitigation.

Geoarchaeological and Geophysical data assessment for baseline enhancement

- 15.7.5 Geophysical surveys undertaken to support the project design, would also be assessed by a suitably qualified archaeological contractor to support baseline enhancement and identification of unknown marine cultural heritage receptors.
- 15.7.6 Similarly, the geoarchaeological assessment of any future marine borehole logs obtained as part of this detailed design ground investigation would also be undertaken to enhance the baseline understanding of submerged palaeolandscapes.

Protocol for Archaeological Discoveries (PAD)

- 15.7.7 If previously unknown sites or material are encountered during the different phases of the Project, measures would be taken to reduce the level of impact. In order to provide for these unexpected discoveries a PAD would be adopted. The PAD is a system for reporting and investigating unexpected archaeological discoveries encountered during construction activities, with a Retained Archaeologist providing guidance and advising on the implementation of the PAD.
- 15.7.8 The PAD also makes provision for the implementation of temporary exclusion zones around areas of possible archaeological interest, for prompt archaeological advice, and, if necessary, for archaeological inspection of important features prior to further activities in the vicinity. The PAD provides a mechanism to comply with the Merchant Shipping Act 1995, including notification of the Receiver of Wreck, and accords with the Code of Practice for Seabed Developers (Ref 15-14) and The Assessment and Management of Marine Archaeology in Port and Harbour Development (Ref 15-12).

## 15.8 Potential Impacts and Effects

- 15.8.1 This section identifies the potential likely effects on the marine heritage receptors as a result of the construction and subsequent operation of the Project which have been identified.
- 15.8.2 The preliminary assessment has identified that the construction phase will potentially result in adverse impacts and effects on marine heritage receptors.
- 15.8.3 These impacts are associated with:
- Construction of port infrastructure; and,
  - Capital dredging.
- 15.8.4 The Physical Processes assessment (**Chapter 16: Physical Processes**) was consulted to assess the damage to known and unknown receptors from indirect impacts.
- 15.8.5 Cumulative impacts on marine heritage receptors that could arise as a result of other developments and activities in the Humber Estuary have been considered as necessary as part of the cumulative impacts and in-combination effects assessment (see **Chapter 25: Cumulative and In-Combination Effects**).

### Construction

- 15.8.6 This section contains an assessment of the potential impacts to marine archaeology and cultural heritage receptors as a result of the construction phase of the Project. It should be noted that the construction of the Project may be completed in a single stage, or it may be sequenced such that the construction of Berth 2 takes place at the same time as operation of Berth 1 (see **Chapter 2: The Project**). The assessment of impacts on the historic marine environment considers the entire extent of the Project and is considered a ‘worst-case’ scenario in terms of potential impacts. The assessment will not therefore be altered by a single or sequenced construction period.
- 15.8.7 The following impact pathways have been assessed:
- Direct impacts on known and potential marine heritage receptors as a result of construction and capital dredging; and
  - Indirect impacts to known and potential marine heritage receptors due to altered sediment or hydrological processes.
- 15.8.8 Any direct impacts to marine archaeological receptors are likely to occur during capital dredging activities of the western berth (Berth 1) (see **Chapter 2: The Project**). Impacts resulting in negative effects upon marine archaeology and cultural heritage receptors as part of dredging or marine piling works (for example) are those involving contact with the seabed and/or the removal of seabed sediments.
- 15.8.9 Any adverse effects, i.e. physical damage, upon marine heritage receptors from direct impacts associated with dredging and marine piling would be permanent and irreversible. As such, the magnitude of direct impacts on known and potential marine heritage receptors, and potential seabed prehistory features as part of

construction and capital dredging activities, if they were to occur, would be high. As a result, if appropriate mitigation is not applied, both the high sensitivity (see **Paragraph 15.3.7**) and the high magnitude of impact on such resources would result in a **major adverse** significance of effect. This is considered to be **significant** in EIA terms.

- 15.8.10 As a result of the assessment of changes to hydrodynamics and sedimentary processes which predicts a low/negligible exposure to change (see **Chapter 16: Physical Processes**), the magnitude of indirect impacts to marine heritage receptors during the construction phase is expected to be small. Similarly, impacts from construction vessel movements are considered to be localised and temporary, and the magnitude of change is assessed as small.
- 15.8.11 Therefore, the high sensitivity of potential receptors and low/negligible magnitude of indirect impacts on such resources will result in **negligible** effects, considered **not significant**.

### Operation

- 15.8.12 This section contains an assessment of the potential impacts to marine heritage receptors as a result of the operational phase of the Project. The following impact pathways have been identified:
- Direct impacts on known and potential marine heritage receptors and deposits of archaeological importance as a result of operational activities and maintenance dredging; and
  - Indirect impacts to known and potential marine heritage receptors due to altered sediment or hydrological processes.
- 15.8.13 As maintenance dredging takes place in areas where the impact has already occurred for the capital dredge during the construction phase, there is unlikely to be further impact. Therefore, the magnitude of indirect impacts on such resource would result in **negligible** effects, considered **not significant**.
- 15.8.14 As a result of the assessment of changes to hydrodynamics and sedimentary processes which predicts a **low/negligible** exposure to change (see **Chapter 16: Physical Processes**), the magnitude of indirect impacts to marine heritage receptors during the operation phase is expected to be small. Similarly, impacts from construction vessel movements are considered to be localised and temporary, and the magnitude of change is assessed as small.
- 15.8.15 Therefore, the high sensitivity of potential receptors and low/negligible magnitude of indirect impacts on such resources will result in negligible effects, considered **not significant**.

### Decommissioning

- 15.8.16 The DCO would not make any provision for the decommissioning of the marine infrastructure above and below water level. This is because the Project would, once constructed, become part of the fabric of the Immingham port estate and would, in simple terms, continue to be maintained so that it can be used for port related activities to meet a long-term need.

15.8.17 Impacts from the decommissioning works were therefore scoped out of EIA.

## 15.9 Preliminary Assessment of Residual Effects

### Construction

15.9.1 The assessment considered two impact pathways from the construction phase in detail. These addressed the potential for direct and indirect impacts on known and potential heritage receptors from construction activities and from capital dredging. No receptors are currently recorded within the Project footprint.

15.9.2 No AEZs are currently being recommended.

15.9.3 Without any mitigation, impacts on potential marine cultural heritage receptors, could result in **major adverse** effects. However, mitigation applied through further investigation could result in the confirmation that:

- a. no marine heritage receptors are located within the project footprint, therefore confirming **no adverse** effects; or
- b. confirming the presence of marine heritage receptors but ensuring avoidance through AEZs, leading to **negligible** effects.

15.9.4 Should seabed prehistory receptors be confirmed at the site, a **positive** effect could be achieved through contributing to the knowledge base of seabed prehistory receptors, for example through geophysical and geoarchaeological assessment.

### Operation

15.9.5 The assessment considered two impact pathways from the operation phase in detail. These addressed the potential for direct and indirect impacts on known and potential heritage receptors from maintenance dredging and operational activities.

15.9.6 Any maintenance dredging works to be carried out during the operational phase will have a relatively small and defined footprint, and significant impacts would have already likely occurred during the construction phase. With the implementation of the appropriate mitigation measures set out above the significance of any direct or indirect effects on marine archaeology will be reduced significantly and the effect predicted to be **negligible** and **not significant**.

### Decommissioning

15.9.7 As set out in **Paragraph 15.8.16**, the DCO would not make any provision for the decommissioning of the marine infrastructure above and below water level. No impacts were therefore considered for the decommissioning phase.

## 15.10 Summary of Preliminary Assessment

15.10.1 A summary of the impact pathways that have been assessed, the identified residual impacts and level of confidence is presented in **Table 15.7** of this Chapter.

**Table 15.7: Summary of potential impact, mitigation measures and residual effects**

Receptor	Impact Pathway	Pre-mitigation Impact Significance	Mitigation Measure	Residual Effects	Confidence
<b>Construction Phase</b>					
Known marine cultural heritage receptors	Direct impacts on known and potential marine heritage receptors and deposits of archaeological importance as a result of construction and capital dredging	No receptors to consider within the area of impact	-	No significant effects	High
Potential marine cultural heritage receptors		Major adverse	Geophysical and geoarchaeological assessment of project survey data.  Then, avoidance of currently unknown receptors, via implementation of AEZs where deemed appropriate and reduction via a PAD.	Negligible	High
Known marine cultural heritage receptors	Indirect impacts to known and potential marine heritage receptors due to altered sediment or hydrological processes.	Negligible	-	Negligible	High
Potential marine cultural heritage receptors		Negligible	-	Negligible	High
<b>Operational Phase</b>					
Known marine cultural heritage receptors	Direct impacts on known and potential marine heritage receptors from maintenance dredging	No receptors to consider within the area of impact	-	No significant effects	-

Receptor	Impact Pathway	Pre-mitigation Impact Significance	Mitigation Measure	Residual Effects	Confidence
Potential marine cultural heritage receptors		Negligible	-	No significant effects	-
Known marine cultural heritage receptors	Indirect impacts to known and potential marine heritage receptors due to altered sediment or hydrological processes.	Negligible	-	Negligible	High
Potential marine cultural heritage receptors		Negligible	-	Negligible	High

## 15.11 References

- Ref 15-1 Chartered Institute for Archaeologists (CIfA) (2014). Standard and guidance for historic environment desk-based assessment. Updated 2020.
- Ref 15-2 Defra (2009) Our Seas – A shared resource: High level marine objectives.
- Ref 15-3 Defra (2014) East Inshore and East Offshore Marine Plans. London, Defra
- Ref 15-4 Department for Transport (2012) National Policy Statement for Ports.
- Ref 15-5 English Heritage (now Historic England) (2000). Managing Lithic Scatters: Archaeological Guidance for planning authorities and developers. London, English Heritage.
- Ref 15-6 English Heritage (now Historic England) (2002). Military Aircraft Crash Sites: archaeological guidance on their significance and future management. London, English Heritage.
- Ref 15-7 English Heritage (2008) Conservation principles, policies and guidance for the sustainable management of the historic environment. London, English Heritage.
- Ref 15-8 English Heritage (now Historic England) (2011). Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition).
- Ref 15-9 English Heritage (now Historic England) (2012). Ships and Boats: Prehistory to Present: Designation Selection Guide. London, English Heritage.
- Ref 15-10 English Heritage (now Historic England) (2013). Marine Geophysics Data Acquisition, Processing and Interpretation Guidance Notes. Swindon, English Heritage
- Ref 15-11 Historic England (2015) Geoarchaeology – Using earth sciences to understand the archaeological record. Swindon, Historic England
- Ref 15-12 Historic England (2016) The Assessment and Management of Marine Archaeology in Port and Harbour Development. Swindon, Historic England
- Ref 15-13 HM Government (2011) UK Marine Policy Statement.
- Ref 15-14 JNAPC (2006). JNAPC Code of Practice for Seabed Development. York, Joint Nautical Archaeology Policy Committee.
- Ref 15-15 Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework.
- Ref 15-16 North East Lincolnshire District Council (2018) Local Plan 2013 to 2032.
- Ref 15-17 PIANC (2014) Dredging and Port Construction: Interactions with Features of Archaeological or Heritage Interest.
- Ref 15-18 Wessex Archaeology (2008) Aircraft Crash Sites at Sea: A Scoping Study. London. English Heritage.

Ref 15-19 HMSO (2009). Marine and Coastal Access Act 2009.

Ref 15-20 HMSO (1973). Protection of Wrecks Act 1973.

Ref 15-21 HMSO (1979). Ancient Monuments and Archaeological Areas Act 1979.

Ref 15-22 HMSO (1986). Protection of Military Remains Act 1986.

Ref 15-23 HMSO (1995). Merchant Shipping Act 1995.

Ref 15-24 HMSO (1996). Treasure Act 1996.

## 15.12 Abbreviations and Glossary of Terms

**Table 15.8: Glossary and Abbreviations**

Term	Acronym	Meaning
Archaeological Exclusion Zone	AEZ	Archaeological Exclusion Zones are the principal means by which any sites or deposits of known or potential archaeological interest are preserved <i>in situ</i> .
British Geological Survey	BGS	A body which aims to advance geoscientific knowledge of the United Kingdom landmass and its continental shelf by means of systematic surveying, monitoring and research
Clay		An inorganic component of soil derived from the weathering of rock and comprising particles less than 0.002mm in equivalent diameter.
Development Consent Order	DCO	The consent for a Nationally Significant Infrastructure Project required under the Planning Act 2008.
Environmental Impact Assessment	EIA	The statutory process through which the likely significant effects of a development project on the environment are identified and assessed.
Environmental Statement	ES	A statutory document which reports the EIA process, produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.
Historic England	HE	Executive non-departmental public body created under section 32 of the National Heritage Act 1983 to:  Secure the preservation of ancient monuments and historic buildings situated in England.  Promote the preservation and enhancement of the character and appearance of conservation areas situated in England.  Promote the public's enjoyment of, and advance their knowledge of, ancient monuments and historic buildings situated in England and their preservation.
Historic Environment Record	HER	Historic Environment Records are sources of, and signposts to, information relating to landscapes, buildings, monuments, sites, places, areas and archaeological finds spanning more than 700,000 years of human endeavour.

Term	Acronym	Meaning
Historic Landscape Characterisation	HLC	A tool to aid identification and interpretation of historical character of an area which considers the landscape and townscape in defining HLC Types.
Holocene	-	The most recent interval of Earth history and includes the present day.
Joint Nautical Archaeological Policy Committee	JNAPC	Formed as a working group on national policy for nautical archaeology.
Multibeam Echosounder	MBES	A multibeam echosounder is a type of sonar that is used to map the seabed.
Marine and Coastal Access Act	MCAA	The Act introduces a new system of marine management. This includes a new marine planning system, which makes provision for a statement of the Government's general policies, and the general policies of each of the devolved administrations, for the marine environment, and also for marine plans which will set out in more detail what is to happen in the different parts of the areas to which they relate.
Marine Management Organisation	MMO	The Marine Management Organisation is an executive non-departmental public body in the United Kingdom established under the Marine and Coastal Access Act 2009, with responsibility for English waters.
Marine Policy Statement	MPS	The UK Marine Policy Statement provides the framework for preparing Marine Plans and is key when making decisions directly affecting the marine environment.
Mean High Water Springs	MHWS	The height of Mean Water High Springs is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest.
Mean Low Water Springs	MLWS	The height of mean low water springs is the average height obtained by the two successive low waters during the same period.
Metre	m	A unit of measurement.
National Planning Policy Framework	NPPF	A planning framework which sets out the Government's planning policies for England and how these are expected to be applied.

Term	Acronym	Meaning
National Planning Statement for Ports	NPSfP	The National Policy Statement for Ports provides the framework for decisions on proposals for new port development.
National Record of the Historic Environment	NRHE	A record of terrestrial and marine cultural heritage assets maintained by Historic England.
North East Lincolnshire Council	NELC	The site falls within the administrative boundary of the North East Lincolnshire Council.
North Lincolnshire Council	NLC	The site partially falls within the administrative boundary of the North Lincolnshire Council.
Palaeoenvironment	-	An environment at a period in the geological past.
Planning Inspectorate	PINS	An executive agency with responsibilities for planning appeals, national infrastructure planning applications, local plan examinations and other planning-related casework in England and Wales.
Preliminary Environmental Information	PEI	The information referred to in Part 1 of Schedule 4 of the EIA Regulations that has been reasonably compiled by the applicant and is reasonably required to assess the environmental effects of a project.
Preliminary Environmental Information Report	PEI Report	A report that compiles and presents the Preliminary Environmental Information gathered for a project.
Protocol for Archaeological Discoveries	PAD	The PAD is a system for reporting and investigating unexpected archaeological discoveries encountered during construction activities, with a Retained Archaeologist providing guidance and advising on the implementation of the PAD.
Royal Air Force	RAF	The United Kingdom's air and space force.
Sand		Soil particles from 0.06mm-2.0mm in equivalent diameter. Fine sand particles are from 0.06mm-0.2mm; medium sand from 0.2mm-0.6mm; and coarse sand from 0.6mm-2.0mm.
Silt		Soil particles from 0.002mm to less than 0.06mm in equivalent diameter.
United Kingdom Hydrographic Office	UKHO	The UK Hydrographic Office is a world-leading centre for hydrography, specialising in marine geospatial data to support safe, secure and thriving oceans.

<b>Term</b>	<b>Acronym</b>	<b>Meaning</b>
Wessex Archaeology	WA	Provider of archaeological services to the offshore renewables sector.