



# Horns Rev Project Four: Preliminary Environmental Information Report (PEIR)

## Volume 3, Chapter 6: Land Use and Agriculture

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## Glossary

Term	Definition
Commitment	A term used interchangeably with mitigation. Commitments are Embedded Mitigation Measures. Commitments are either Primary (Design) or Tertiary (Inherent) and embedded within the assessment at the relevant point in the EIA (e.g. at Scoping or PEIR). The purpose of Commitments is to reduce and/or eliminate Likely Significant Effects (LSE's), in EIA terms.
Cumulative effects	The combined effect of Hornsea Four in combination with the effects from a number of different projects, on the same single receptor/resource. Cumulative impacts are those that result from changes caused by other past, present or reasonably foreseeable actions together with Hornsea Project Four.
Design Envelope	A description of the range of possible elements that make up the Hornsea Project Four design options under consideration, as set out in detail in the project description. This envelope is used to define Hornsea Project Four for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the "Rochdale Envelope" approach.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Projects (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.

Term	Definition
Energy balancing infrastructure (EBI)	The onshore substation includes energy balancing Infrastructure. These provide valuable services to the electrical grid, such as storing energy to meet periods of peak demand and improving overall reliability.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement.
EIA Directive	European Union Directive 85/337/EEC, as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC and then codified by <a href="#">Directive 2011/92/EU</a> of 13 December 2011 (as amended in 2014 by <a href="#">Directive 2014/52/EU</a> ).
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
Export cable corridor (ECC)	The specific corridor of seabed (seaward of Mean High Water Springs (MHWS)) and land (landward of MHWS) from the Hornsea Project Four array area to the Creyke Beck National Grid substation, within which the export cables will be located.
Haul Road	The track along the onshore ECC which the construction traffic would use to access work fronts.
High Voltage Alternating Current (HVAC)	High voltage alternating current is the bulk transmission of electricity by alternating current (AC), whereby the flow of electric charge periodically reverses direction.
High Voltage Direct Current (HVDC)	High voltage direct current is the bulk transmission of electricity by direct current (DC), whereby the flow of electric charge is in one direction.
Hornsea Project Four offshore wind farm	The term covers all elements of the project (i.e. both the offshore and onshore). Hornsea Four infrastructure will include offshore generating stations (wind turbines), electrical export cables to landfall, and connection to the electricity transmission network. Hereafter referred to as Hornsea Four.
Landfall	The generic term applied to the entire landfall area between Mean Low Water Spring (MLWS) tide and the Transition Joint Bay (TJB) inclusive of all construction works, including the offshore and onshore ECC, intertidal working area and landfall compound.
Orsted Hornsea Project Four Ltd.	The Applicant of proposed Hornsea Project Four offshore wind farm.
Maximum design scenario	The maximum design parameters of each Hornsea Four asset (both on and offshore) considered to be a worst case for any given assessment.
Mitigation	A term used interchangeably with Commitment(s) by Hornsea Four. Mitigation measures (Commitments) are embedded within the assessment at the relevant point in the EIA (e.g. at Scoping or PEIR).
National Grid Electricity Transmission (NGET) substation	The grid connection location for Hornsea Four.
Onshore export cables	Cables connecting the landfall first to the onshore substation and then on to the NGET substation at Creyke Beck.

Term	Definition
Onshore substation (OnSS)	Located as close as practical to the NGET substation at Creyke Beck and will include all necessary electrical plant to meet the requirements of the National Grid.
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Trenchless Techniques	Also referred to as trenchless crossing techniques or trenchless methods. These techniques include HDD, thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.

## Acronyms

Acronym	Definition
ALC	Agricultural Land Classification
BMV	Best and Most Versatile
CEMP	Construction Environmental Management Plan
CoCP	Code of Construction Practice
Co	Commitment
CRoW	Countryside and Rights of Way Act 2000
CSS	Countryside Stewardship Scheme
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EBI	Energy Balancing Infrastructure
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
ELS	Entry Level Stewardship
EP1HS	Extended Phase 1 Habitat Survey
ERY	East Riding of Yorkshire
ERYC	East Riding of Yorkshire Council
ESAS	Environmentally Sensitive Areas Scheme
ES	Environmental Statement
ESS	Environmental Stewardship Scheme
GAEC	Good Agricultural and Environmental Condition
GIS	Geographical Information Systems
Hectares	Ha
HDD	Horizontal Directional Drilling
HLS	Higher-Level Stewardship
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IEMA	Institute of Environmental Management and Assessment
ILA	Important Landscape Area
IPC	Infrastructure Planning Commission

Acronym	Definition
IRZ	Impact Risk Zone
LPA	Local Planning Authority
LSE	Likely Significant Effect
LWS	Local Wildlife Site
MAFF	Ministry of Agriculture, Fisheries and Food
MDS	Maximum Design Scenarios
MHWS	Mean High Water Springs
NE	Natural England
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NSRI	National Soil Resources Institute
OAS	Organic Aid Scheme
OELS	Organic Entry Level Stewardship
OS	Ordnance Survey
OnSS	Onshore Substation
PEIR	Preliminary Environmental Information Report
PINS	(The) Planning Inspectorate
PRoW	Public Rights of Way
SoCC	Statement of Community Consultation
SoS	Secretary of State
SSSI	Site of Special Scientific Interest
USGS	United States Geological Survey

## Units

Unit	Definition
GW	Gigawatt (power)
ha	Hectares
km	Kilometres
kV	Kilovolt (electrical potential)
kW	Kilowatt (power)
m	Meters

## 6.1 Introduction

6.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents an assessment of the potential impacts of the onshore elements of the Hornsea Project Four offshore wind farm (hereafter Hornsea Four) on land use and agriculture. Specifically, this chapter considers the potential impact of Hornsea Four landward of Mean High Water Springs (MHWS) during its construction, operation and maintenance, and decommissioning phases.

6.1.1.2 Orsted Hornsea Project Four Limited (the Applicant) is proposing to develop Hornsea Four. Hornsea Four will include both offshore and onshore infrastructure including offshore generating stations (wind turbines), electrical export cables to landfall and on to a connection to the electricity transmission network at National Grid Creyke Beck (please see [Volume 1, Chapter 4: Project Description](#) for full details on the Project Design).

6.1.1.3 This chapter describes the impacts of any temporary and permanent land take within the onshore study areas that may occur to the following receptors:

- **Land use:** human beings (including landowners, occupiers, local communities and other land users), as well as Public Rights of Way (PRoW), cycle routes and coastal paths; and
- **Agriculture:** The availability and use of the land for current agricultural practice.

6.1.1.4 The assessment also considers cumulative impacts of existing and proposed projects. Further information regarding the approach taken towards the EIA is discussed in [Section 6.12](#).

6.1.1.5 Hornsea Four also has the potential to impact land use and agriculture through changes to other components of the environment (e.g. through specific source-pathway-receptor linkages), as discussed in other technical chapters within this PEIR. For a full understanding of wider land use implications, the reader is directed to the following in Volume 3:

- [Chapter 1: Geology and Ground Conditions](#);
- [Chapter 2: Hydrology and Flood Risk](#);
- [Chapter 3: Ecology and Nature Conservation](#);
- [Chapter 4: Landscape and Visual](#); and
- [Chapter 7: Traffic and Transport](#).

## 6.2 Purpose

6.2.1.1 This PEIR presents the preliminary environmental information for Hornsea Four and sets out the findings of the EIA to date to support the pre-DCO application consultation activities required under the Planning Act 2008.

6.2.1.2 The feedback from this consultation will be used to inform the final project design where appropriate and the associated EIA (which will be reported in an Environmental Statement (ES)) that will accompany the DCO application to PINS.

6.2.1.3 This PEIR chapter:

- Presents the existing environmental baseline established from desk studies, the findings of the walkover survey undertaken in February 2019 and consultation;
- Presents the potential environmental effects on land use and agriculture arising from Hornsea Four, based on the information gathered and the analysis and assessments undertaken to date;
- Identifies any assumptions and limitations encountered in compiling the environmental information; and
- Highlights any identified monitoring and/or mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

## 6.3 Planning and Policy Context

6.3.1.1 Planning policy on offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to land use and agriculture, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1; DECC, 2011a).

6.3.1.2 NPS EN-1 includes guidance on what matters are to be considered in the assessment. These are summarised in [Table 6.1](#).

6.3.1.3 The UK planning and policy context for Hornsea Four is set out in [Volume 1, Chapter 2: Planning and Policy Context](#). The most relevant of these in relation to land use and agriculture are:

- Countryside and Rights of Way Act (CRoW) 2000;
- The Commons Act 2006;
- The Environmental Stewardship (England) Regulations 2005 (as amended);
- Marine and Coastal Access Act 2009;
- The Wildlife and Countryside Act 1981 (as amended);
- Natural Environment White Paper 2011;
- National Policy Statement (NPS) for Energy (EN-1) 2011; and
- National Planning Policy Framework (NPPF) 2012.

**Table 6.1: Summary of NPS EN-1 relevant to Land Use and Agriculture.**

Summary of NPS EN-1 provisions	How and where considered in the PEIR
<p><i>"The ES should identify existing and proposed land uses near the project, any effects of replacing an existing development or use of the site with the proposed project or preventing a development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan"</i> (EN-1, paragraph 5.10.5).</p>	<p>No such projects have been identified, please see <a href="#">Volume 4, Annex 5.5: Onshore Cumulative Effects</a> and <a href="#">Annex 5.6: Location of Onshore Cumulative Schemes</a>.</p>
<p><i>"Applicants will need to consult the local community on their proposals to build on open space, sports or recreational buildings and land. Taking account of the consultations, applicants should consider providing new or additional open space including green infrastructure, sport or recreation facilities, to substitute for any losses as a result of their proposal. Applicants should use any up-to-date local authority assessment or, if there is none, provide an independent assessment to show whether the existing open space, sports and recreational buildings and land is surplus to requirements"</i> (EN-1, paragraph 5.10.6).</p>	<p>The proposals include construction on Ulrome Sands but otherwise avoids direct effects on open space (including parks, ornamental gardens, natural/semi-natural green space, green corridors, amenity green space, sports/playing pitches, allotments, cemeteries / churchyards, and open space provision for young people). The construction required at the beach will not affect long-term informal recreation and access restrictions will apply during the construction phase only.</p> <p>A programme of community consultation is ongoing and will continue to ensure local views are taken in to account in the project. <a href="#">Volume 1, Chapter 6: Consultation</a> sets out more fully the consultation approach taken by Hornsea Four.</p>
<p><i>"During any pre-application discussions with the applicant the local planning authority (LPA) should identify any concerns it has about the impacts of the application on land use, having regard to the development plan and relevant applications and including, where relevant, whether it agrees with any independent assessment that the land is surplus to requirements"</i> (EN-1, paragraph 5.10.7).</p>	<p>Pre-application discussions are ongoing with ERYC and will be undertaken up to the DCO application through the Evidence Plan process. Further details are provided in <a href="#">Section 6.4</a>.</p>
<p><i>"Applicants should seek to minimise impacts on the "best and most versatile" agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination"</i> (EN-1, paragraph 5.10.8).</p>	<p>Effects on the "best and most versatile" agricultural land and soil quality are assessed in <a href="#">Section 6.11</a></p>

Summary of NPS EN-1 provisions	How and where considered in the PEIR
<p><i>"Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place" (EN-1, paragraph 5.10.9).</i></p>	<p>An assessment on Minerals Safeguarding Areas is presented in <a href="#">Chapter 1: Geology and Ground Conditions</a>. This assessment includes sterilisation of such safeguarded minerals resources in the longer term.</p>
<p><i>"The general policies controlling development in the countryside apply with equal force in Green Belts but there is, in addition, a general presumption against inappropriate development within them. Such development should not be approved except in very special circumstances. Applicants should therefore determine whether their proposal, or any part of it, is within an established Green Belt and if it is, whether their proposal may be inappropriate development within the meaning of Green Belt policy" (EN-1, paragraph 5.10.10).</i></p>	<p>No areas of designated Green Belt will be affected by the proposals. The closest designated green belt (around the city of York) is located approximately 30 km at its nearest point from any part of Hornsea Four.</p>
<p><i>"However, infilling or redevelopment of major developed sites in the Green Belt, if identified as such by the local planning authority, may be suitable for energy infrastructure. It may help to secure jobs and prosperity without further prejudicing the Green Belt or offer the opportunity for environmental improvement. Applicants should refer to relevant criteria<sup>133</sup> on such developments in Green Belts" (EN-1, paragraph 5.10.11).</i></p>	
<p><i>"An applicant may be able to demonstrate that a particular type of energy infrastructure, such as an underground pipeline, which, in Green Belt policy terms, may be considered as an "engineering operation" rather than a building is not in the circumstances of the application inappropriate development. It may also be possible for an applicant to show that the physical characteristics of a proposed overhead line development or wind farm are such that it has no adverse effects which conflict with the fundamental purposes of Green Belt designation" (EN-1, paragraph 5.10.12).</i></p>	
<p><i>"Although in the case of much energy infrastructure there may be little that can be done to mitigate the direct effects of an energy project on the existing use of the proposed site (assuming that some at least of that use can still be retained post project construction) applicants should nevertheless seek to minimise these effects and the effects on existing or planned uses near the site by the application of good design principles, including the layout of the project" (EN-1, paragraph 5.10.19).</i></p>	<p>Impacts on existing land use are minimised through the commitment to reinstate working areas to pre-existing conditions in line with latest guidance (Co10). The majority of land traversed by the ECC is agricultural and following construction the expectation is that farming practices will continue above the buried cable, with recreational use of Ulrome Sands also continued post-construction.</p> <p>The project's configuration, routing and layout has taken account of multiple environmental criteria including land use with the processes followed set</p>

Summary of NPS EN-1 provisions	How and where considered in the PEIR
	<p>out in <a href="#">Volume 1, Chapter 3: Site Selection and Consideration of Alternatives</a>.</p> <p>The design of the OnSS takes full account of the local environment and land uses and incorporates good design principles. <a href="#">Volume 4, Annex 4.6: Outline Design Vision Statement</a> is provided as part of the PEIR application.</p>

6.3.1.4 NPS EN-1 also highlights several factors relating to the determination of an application and in relation to mitigation. These are summarised in [Table 6.2](#).

**Table 6.2 :Summary of NPS EN-1 policy on decision making relevant to Land Use and Agriculture**

Summary of NPS EN-1 provisions	How and where considered in the PEIR
<p><i>"Where the project conflicts with a proposal in a development plan, the Infrastructure Planning Commission (IPC) [hereafter the Secretary of State] should take account of the stage which the development plan document in England or local development plan in Wales has reached in deciding what weight to give to the plan for the purposes of determining the planning significance of what is replaced, prevented or precluded. The closer the development plan document in England or local development plan in Wales is to being adopted by the LPA, the greater weight which can be attached to it"</i> (EN-1, paragraph 5.10.13).</p>	<p>No such projects have been identified, reference should be made to <a href="#">Volume 4, Annex 5.5: Onshore Cumulative Effects</a> and <a href="#">Annex 5.6: Location of Onshore Cumulative Schemes</a>.</p>
<p><i>"The Secretary of State should not grant consent for development on existing open space, sports and recreational buildings and land unless an assessment has been undertaken either by the local authority or independently, which has shown the open space or the buildings and land to be surplus to requirements or the IPC determines that the benefits of the project (including need), outweigh the potential loss of such facilities, taking into account any positive proposals made by the applicant to provide new, improved or compensatory land or facilities. The loss of playing fields should only be allowed where applicants can demonstrate that they will be replaced with facilities of equivalent or better quantity or quality in a suitable location"</i> (EN-1, paragraph 5.10.14).</p>	<p>As stated in <a href="#">Table 6.1</a> no loss of open space will take place apart from temporary access restriction to Ulrome Sands during the construction phase. No assessment on loss is therefore required to determine if such resources are surplus to requirement.</p>
<p><i>"Ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. It should give little weight to the loss of poorer quality agricultural land (in grades 3b, 4 and 5)"</i> (EN-1, paragraph 5.10.15).</p>	<p>Effects on the "best and most versatile" agricultural land and soil quality are assessed in <a href="#">Section 6.11</a></p>
<p><i>"In considering the impact on maintaining coastal recreation sites and features, the IPC should expect applicants to have</i></p>	<p>Impacts of construction that affect recreational use of the coast through temporary disruption to</p>

Summary of NPS EN-1 provisions	How and where considered in the PEIR
<p><i>taken advantage of opportunities to maintain and enhance access to the coast. In doing so the IPC should consider the implications for development of the creation of a continuous signed and managed route around the coast, as provided for in the Marine and Coastal Access Act 2009" (EN-1, paragraph 5.10.16).</i></p>	<p>beach access and coastal paths is specifically assessed in this chapter (<a href="#">Section 6.11.1</a>). No operational phase effects have been identified.</p> <p>The English Coast path is not, as yet, designated along the stretch of coastline affected by the project (i.e. Ulrome Sands). Hornsea Four has recognised this and a specific commitment (Co158) has been included for impacts to be minimised or avoided through site design and phasing within working constraints for the landfall construction.</p>
<p><i>"When located in the Green Belt, energy infrastructure projects are likely to comprise 'inappropriate development'. Inappropriate development is by definition harmful to the Green Belt and the general planning policy presumption against it applies with equal force in relation to major energy infrastructure projects. The IPC will need to assess whether there are very special circumstances to justify inappropriate development. Very special circumstances will not exist unless the harm by reason of inappropriateness, and any other harm, is outweighed by other considerations. In view of the presumption against inappropriate development, the IPC will attach substantial weight to the harm to the Green Belt when considering any application for such development while taking account, in relation to renewable and linear infrastructure, of the extent to which its physical characteristics are such that it has limited or no impact on the fundamental purposes of Green Belt designation" (EN-1, paragraph 5.10.17).</i></p>	<p>No part of Hornsea Four will be located in the Green Belt (with the closest Green Belt being located 30 km from the project's footprint around the city of York).</p>
<p><i>"Where green infrastructure is affected, the IPC should consider imposing requirements to ensure the connectivity of the green infrastructure network is maintained in the vicinity of the development and that any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space including appropriate access to new coastal access routes" (EN-1, paragraph 5.10.20).</i></p>	<p>No green infrastructure (i.e. multi-functional greenspace networks which supports natural and ecological processes and is integral to the health and quality of life of sustainable communities) has been identified as being affected by Hornsea Four. As stated previously, no open space will be affected post-construction. However, specific assessment on PRow and access to the coast (including the English Coast Path) has been undertaken and is set out within this chapter.</p>
<p><i>"The Secretary of State should also consider whether mitigation of any adverse effects on green infrastructure and other forms of open space is adequately provided for by means of any planning obligations, for example exchange land and provide for appropriate management and maintenance agreements. Any exchange land should be at least as good in</i></p>	<p>The lack of predicted effects on open space and green infrastructure avoids the need to secure mitigation via planning obligations. However, commitments to reduce effects on PRow (Co 79) and the proposed English Coast Path (Co 158) will be set out within the Code of Construction</p>

Summary of NPS EN-1 provisions	How and where considered in the PEIR
<p><i>terms of size, usefulness, attractiveness and quality and, where possible, at least as accessible. Alternatively, where Sections 131 and 132 of the Planning Act 2008 apply, replacement land provided under those sections will need to conform to the requirements of those sections" (EN-1, paragraph 5.10.21).</i></p>	<p>Practice (CoCP) which will be a requirement of the DCO.</p>
<p><i>"Where a proposed development has an impact upon a Mineral Safeguarding Area (MSA), the IPC should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources" (EN-1, paragraph 5.10.22).</i></p>	<p>Impacts on Mineral Safeguarding Areas are assessed in <a href="#">Chapter 1: Geology and Ground Conditions</a>.</p>
<p><i>"Where a project has a sterilising effect on land use (for example in some cases under transmission lines) there may be scope for this to be mitigated through, for example, using or incorporating the land for nature conservation or wildlife corridors or for parking and storage in employment areas" (EN-1, paragraph 5.10.23).</i></p>	<p>The OnSS will sterilise land use throughout its operational life resulting in a small loss of agricultural resource. Permanent disruption / reduction of land has been scoped out of the assessment (as agreed by PINS in their scoping opinion (PINS, 2018)) subject to inclusion of a CoCP (Co100) due to the unlikely significance of the effect.</p>
<p><i>"Rights of way, National Trails and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders. The [Secretary of State] should expect applicants to take appropriate mitigation measures to address adverse effects on coastal access, National Trails and other rights of way. Where this is not the case the [Secretary of State] should consider what appropriate mitigation requirements might be attached to any grant of development consent" (EN-1, paragraph 5.10.24).</i></p>	<p>Assessment of rights of access are presented in <a href="#">Section 6.11</a>. It should be noted that <a href="#">Chapter 7: Traffic and Transport</a> assesses impacts on pedestrians using paths alongside the highway network but not specifically users of other rights of way, trails, and other access.</p>

6.3.1.5 NPS EN-1 states at paragraph 4.1.5 that:

*"Other matters that the Secretary of State may consider important and relevant to its decision-making may include Development Plan Documents or other documents in the Local Development Framework. In the event of a conflict between these or any other documents and an NPS, the NPS prevails for the purposes of IPC decision making given the national significance of the infrastructure".*

6.3.1.6 [Table 6.3](#) provides details of the regional and local planning policy documents and the policies contained within these relevant to land use and agriculture.

**Table 6.3: Summary of regional and local planning policies relevant to Land Use and Agriculture.**

Document	Policy / Guidance	How and where considered in the PEIR
East Riding Yorkshire Local Plan Strategy Document (April 2016)	S8: Connecting people and places <i>"Existing and disused public transport, cycling and footpath networks and facilities, including Public Rights of Way (PRoW), will be enhanced and/or protected, particularly within and linking to the Major Haltemprice Settlements, Principal Towns, and Towns."</i>	Effects on cycling and footpath networks are assessed in <a href="#">Section 6.11</a> .
	C3: Providing public open space for leisure and recreation <i>"Proposals should maintain and/or enhance the quantity, quality and accessibility of open space and address any shortfalls in provision"</i> .	As per the Scoping Response an assessment on the impact of PRoW is presented in <a href="#">Section 6.11</a> , and this is considered to be the main aspect of accessibility affected by Hornsea Four.
	A2: Bridlington Coastal sub area <i>"Sensitively maintain the character of the undeveloped coast, particularly the Flamborough Heritage Coast, and improve public access to, and enjoyment of, the coast, ensuring that development proposals protect and enhance its distinctive landscape, conservation initiatives and the quality of the natural environment."</i>	Effects on the coast are presented in <a href="#">Section 6.11</a> .

## 6.4 Consultation

- 6.4.1.1 Consultation is a key part of the DCO application process. No specific meetings have been held solely in relation to land use and agriculture. However, consultation with East Riding of Yorkshire Council (ERYC) has been undertaken as part of the Evidence Plan process, with discussions held at the Human Environment Technical Panel meetings in January and May 2019. The Human Environment Technical Panels cover a range of technical topics (traffic and transport, noise and vibration, air quality, and land use and agriculture), the content of which differ between meetings, subject to the status of technical assessment progression.
- 6.4.1.2 Consultation has also occurred through the Scoping Report (Ørsted, 2018) and will continue following the submission of the PEIR and prior to the submission of the DCO application. Consultation with relevant land owners is also ongoing and is not presented within this chapter. A summary of the project consultation process are presented within [Volume 1, Chapter 6: Consultation](#).

6.4.1.3 A summary of the key issues raised during consultation specific to land use and agriculture is provided in [Table 6.4](#) together with how these issues have been considered in the production of this PEIR.

**Table 6.4: Consultation Responses**

Consultee	Document/Forum, Date	Summary of comment(s) received	Where addressed in the PEIR
PINS	Scoping Opinion, November 2018	<p>Temporary disruption of coastal recreational use: construction phase.</p> <p><i>"The Scoping Report does not provide an accurate estimate of the duration of the construction works which will affect coastal recreational use, however Figure 3.7 indicates works could be ongoing for a month or more in two successive years. It is noted that Co79 (Commitment) intends to deliver mitigation in the form of Public Right of Way (PRoW)/footpath diversions however; the nature and extent of this are not known. Given the scale of the works at the landfall location the Inspectorate considers that significant effects during construction could arise, and considers that the ES should provide an assessment of effects on coastal recreational receptors."</i></p>	<p>Details on Hornsea Four and duration of works for construction are included in <a href="#">Volume 1, Chapter 4: Project Description</a>. An assessment of such temporary disruption is provided in <a href="#">paragraph 6.11.1.1</a>.</p>
PINS	Scoping Opinion, November 2018	<p>Temporary disruption from reduction of land: decommissioning phase</p> <p><i>"While it is accepted that the cabling will remain in situ and that relatively minimal areas of land will be affected by decommissioning the above ground structures of the Proposed Development, the Scoping Report does not indicate the duration of the decommissioning phase. The Inspectorate considers that these works may be of sufficient duration to give rise to significant effects, and therefore does not agree that this matter can be scoped out of the ES based on the current information."</i></p>	<p>Details on Hornsea Four and duration of works for the decommissioning phase are included in <a href="#">Volume 1, Chapter 4: Project Description</a>. A proportionate assessment is provided in <a href="#">Section 6.11.3</a>.</p>

Consultee	Document/Forum, Date	Summary of comment(s) received	Where addressed in the PEIR
PINS	Scoping Opinion, November 2018	<p>Cumulative land and agriculture effects: onshore construction</p> <p><i>“While it is appreciated that these effects will be temporary, given the large scale of the Proposed Development and other developments identified in Section 8 the Inspectorate considers that significant effects could occur if developments affect the same geographical area and in temporal extent. This might be when impacts are sequential or overlapping. The Inspectorate would expect to see an assessment in the ES where significant effects could occur.”</i></p>	Consideration on any cumulative effects on the land during construction is detailed in <a href="#">Section 6.12</a> .
Public Health England	Scoping Opinion, November 2018	<i>“Within the land use assessment any impacts on access to publicly accessible open space must be identified and mitigation measures identified. Where open space will require restoration the mitigation measures must identify the quality of the natural environment to be achieved and measures to promote access across the life course.”</i>	No direct effects on publically accessible land have been identified apart from the beach at Ulrome Sands which is assessed in <a href="#">Section 6.11</a> .
Natural England	Scoping Opinion, November 2018	<p><i>“Soils should be considered in line with Paragraph 112 of the NPPF. The applicant should consider the following issues as part of the Environmental Statement:</i></p> <p><i>1. The degree to which soils are going to be disturbed/harmed as part of this development and whether ‘best and</i></p>	It should be noted that PINS agreed to scope out the effect of soil compaction during construction in their Scoping Opinion (as detailed in <a href="#">Chapter 1: Geology and Ground Conditions</a> ). Effects on the “best and most versatile” agricultural land and soil quality are assessed in <a href="#">Section 6.11</a> .

Consultee	Document/Forum, Date	Summary of comment(s) received	Where addressed in the PEIR
		<p><i>most versatile' agricultural land is involved. This may require a detailed survey if one is not already available. For further information on the availability of existing agricultural land classification (ALC) information see <a href="http://www.magic.gov.uk">www.magic.gov.uk</a>. Natural England Technical Information Note 049 - Agricultural Land Classification: protecting the best and most versatile agricultural land also contains useful background information.</i></p> <p><i>2. If required, an agricultural land classification and soil survey of the land should be undertaken. This should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres.</i></p> <p><i>3. The Environmental Statement should provide details of how any adverse impacts on soils can be minimised. Further guidance is contained in the Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites."</i></p>	
Natural England	Scoping Opinion, November 2018	<p><i>"Traffic and transport will assess the impact on PRoW and non-designated access routes during construction, this should include the England Coast Path."</i></p>	<p>The potential impacts on access routes during construction are discussed in <a href="#">Chapter 7: Traffic and Transport</a> and in <a href="#">Section 6.11.1</a>.</p>

## 6.4.2 Hornsea Four Design Evolution – Stakeholder Consultation

6.4.2.1 As identified in [Volume 1, Chapter 3: Site Selection and Consideration of Alternatives](#) and [Volume 1, Chapter 4: Project Description](#), the Hornsea Four design envelope has been refined significantly and is anticipated to be further refined for the DCO submission. This process is reliant upon stakeholder consultation feedback.

6.4.2.2 Design amendments of relevance to land use and agriculture comprise:

- Landfall – the Hornsea Four PEIR boundary currently comprises two landfall options (shown in [Volume 1, Chapter 4: Project Description, Figure 4.13](#)), which have been assessed in the respective PEIR receptor chapters. A decision on the preferred landfall (A3 or A4) will be made post-PEIR and the Project Description and assessments updated for the ES and DCO for the preferred 40,000 m<sup>2</sup> compound within the landfall location.
- OnSS Operation and Maintenance Access - Hornsea Four are currently investigating the possibility of making the temporary construction access off the A1079 a permanent operational access and utilising the operation access from Dunswell and Cottingham for limited construction works associated with HDD from the ECC to the OnSS.
- OnSS Design: The design of the Hornsea Four OnSS mitigation (inclusive of measures set out in [Volume 4, Annex 4.6: Outline Design Vision Statement](#)) will be further evolved based on the results of the PEIR assessments, in addition to stakeholder feedback and suggestions. Of particular relevance to Land Use and Agriculture is the design and placement of the permanent diversion of the SKID16 PRow (further details in [Section 6.11.2](#)).

## 6.5 Study area

6.5.1.1 The study area for the land use and agriculture assessment is consistent with that identified study in the Scoping Report (Ørsted, 2018) and includes:

- All receptors within 5 km of:
  - The Onshore Substation (OnSS) site (including permanent and temporary storage areas, Energy Balancing Infrastructure (EBI) and 400kV export cable corridor); and
- All receptors within 2 km of the:
  - landfall (including logistics compounds and connection works areas); and
  - Onshore Export Cable Corridor (ECC) (including temporary works areas).

6.5.1.1 The land use and agriculture study area is presented on [Figure 6.1](#) and these distances have been determined to ensure the potential impacts on recreational visual amenity are reflected in the assessment, notably when assessing potential effects on recreational usage of the area. Full assessment on the terrestrial landscape and visual receptors is however set out in [Chapter 4: Landscape and Visual](#).

6.5.1.2 The study area at Scoping was up to 5km (due to visual effects on recreational receptors) and this has been maintained for the PEIR. It is anticipated that the land use and agriculture study area can be reduced to 1km for land use at DCO, subject to agreement with the relevant stakeholders, with landscape and visual effects assessed in [Chapter 4: Landscape and Visual](#).



## 6.6 Methodology to inform baseline

### 6.6.1 Desktop Study

6.6.1.1 A desk study was undertaken to obtain information and data on land use and agriculture (including soil resources) across the land use and agriculture study area (as defined in [Section 6.5.1.1](#)). The sources of information set out in [Table 6.5](#) were consulted.

6.6.1.2 Please note information on the English Coast Path Routes at the landfall was not available at the time of undertaking a desktop review. However, it is assumed in this PEIR that the coast path route will run parallel to the coast, or very close to the coast, and an assessment is included on this basis in [Section 6.11](#).

**Table 6.5: Key Sources of Land Use and Agriculture Data.**

Source	Summary
Ordnance Survey (OS) 1:10,000 scale mapping	Transport networks including roads and railway lines plus urban areas
ERYC	Definitive map of PRoW
EMAP	Utilities Search (gas and oil pipelines, mains water and Sewage, Telecoms and fibre-optic cables) ( <a href="https://www.groundsure.com/report/reportutility">https://www.groundsure.com/report/reportutility</a> )
Google Maps	Publically available aerial imagery
National Soil Resources Institute (NSRI) Cranfield University	Soil Classification ( <a href="http://www.magic.defra.gov.uk">www.magic.defra.gov.uk</a> )
Natural England (NE)	Agricultural Land Classification (ALC) ( <a href="http://www.magic.defra.gov.uk">www.magic.defra.gov.uk</a> )
Natural England	Countryside Environmental Stewardship Schemes (2016) Management Areas ( <a href="http://www.magic.defra.gov.uk">www.magic.defra.gov.uk</a> )
Natural England	CRoW Act (2000) Registered Common Land ( <a href="http://www.magic.defra.gov.uk">www.magic.defra.gov.uk</a> )
Natural England	English Coast Path Routes ( <a href="http://www.magic.defra.gov.uk">www.magic.defra.gov.uk</a> , <a href="http://www.gov.uk/environment/access-to-the-countryside">www.gov.uk/environment/access-to-the-countryside</a> )
North and East Yorkshire Ecological Data Centre	Local Wildlife Sites
ERYC Core Strategy and Development	ERYC Local Plan Strategy Document (April 2016); and Holderness District Wide Local Plan (adopted 1999)
PINS Scoping Opinion November, 2018	A review of scoping responses and consultee feedback

## 6.6.2 Site Specific Surveys

6.6.2.1 The desk-based data identified in [Table 6.5](#) is considered to be sufficiently comprehensive to underpin this PEIR assessment. No surveys are anticipated. However, this will be agreed with the relevant stakeholders post-PEIR.

6.6.2.2 However, as part of the Ecology Phase 1 Habitat Survey (EP1HS) ([Volume 6, Annex 3.1: Extended Phase 1 Habitat Survey Report](#)) notes were made in relation to land use, habitats and recreational uses of the land, as well as footpaths in order to ground truth desk-based data and identify any specific receptors in proximity to the project area that needed to be taken account of. This survey was confined to the onshore ECC and OnSS site ([Figure 6.1](#)) with a 50m buffer, as no access was available to the landfall at the time. Hornsea Four are working to obtain access and, once granted, a walkover of this area will be undertaken to update the baseline, with the findings being presented in the Environmental Statement (ES). A summary of the survey in February 2019 is provided in [Table 6.6](#).

**Table 6.6: Summary of site-specific survey data.**

Title, year and reference	Summary	Coverage of Hornsea Four development area
Hornsea Four land use and agriculture survey, 2019	<p>A walkover survey was undertaken as part of EPH1S to ground truth findings from desk-based study between 6 and 15 February 2019 to determine the following:</p> <ul style="list-style-type: none"> <li>• Land Use (e.g. crops harvested, farming land, ecological habitats); and</li> <li>• Recreational receptors (e.g. PRow, Cycle Routes, golf courses, parks, play areas etc.)</li> </ul>	Approximately 70% coverage of the refined onshore Hornsea Four development footprint (Onshore ECC and OnSS site). No survey was permitted at landfall.

## 6.7 Baseline environment

### 6.7.1 Existing baseline

6.7.1.1 The information presented in this section has drawn on the findings obtained during the desk-based data collection exercise and the findings of the walkover survey undertaken in February 2019. To aid the characterisation of the baseline environment, a description of the baseline has been made using the following classifications:

- **Land Use and Recreation:** identifies high level land use with specific identification of any recreational receptors;
- **Agriculture:** identifies the agricultural land cover and where applicable describes the crop being grown. This baseline also includes details of the Agricultural Land Classification (ALC) which provides a description of the grades of land found within the land use and agriculture study area in the context of its versatility and suitability for growing crops;
- **Soil Types and Distribution:** identifies the soil found within the land use and agriculture study area including texture, type, geology and fertility;
- **Stewardship Schemes:** identifies and describes any land or agri-environment schemes present in the land use and agriculture study area; and
- **Public Rights of Way (PROW) and Cycle Routes:** identifies all such designated routes within the land use and agriculture study area.

6.7.1.2 The description of the baseline conditions provided in the subsequent sections has been divided into the following three development footprint areas:

- Landfall;
- Onshore ECC (including compounds and accesses); and
- OnSS and EBI site (including associated 400 kV ECC search area).

### 6.7.2 Land Use and Recreation

#### Landfall

6.7.2.1 Landward of Ulrome Sands agriculture is the primary land use in the landfall area with the majority of the landscape dominated by open fields bordered by hedges and the occasional plantation woodland. The farming within this area is arable (predominantly cereals and root crops) with areas of grazing and livestock interspersed.

6.7.2.2 There are no recreational facilities located within the direct footprint of the landfall apart from Ulrome Sands itself, although within the 2 km land use and agriculture study area are located; Barmston Beach Holiday Park; Rectory Farm Caravan Site; several small commercial entities (e.g. High Stonehills Commercial Fishery); and pubs/eateries serving locals, tourists and beach users (e.g. The Cow Shed Tea Shop, Jackson R T & Sons). Additionally, one Local Wildlife Site (LWS) 'Hamilton Hill' neighbours the southern extent of the connection works on the landward side of the Fraisthorpe Beach, just north of Barmston.

LWSs can be considered a recreational receptor if they are open to the public. The beach is also considered a recreational facility for informal activities such as dog walking.

### Onshore ECC

- 6.7.2.3 The onshore ECC and associated land use and agriculture study area is predominantly rural in nature with the major land use being intensive agriculture typified by large arable fields within the fertile plain of the wider Holderness area. A mixture of soil types and conditions enable a diverse utilisation of farming activities to be made. Such practises include the cultivation of cereals, roots, potatoes and field vegetables (on areas of loamy and sandy soils); productive areas of grassland (on loamy and clayey soils) as well as grazing livestock (on slightly acidic, rich loam and clayey soils). A further description of these soil types, their characteristics and their suitability for farming practises along the ECC are provided in [Table 6.8](#).
- 6.7.2.4 A number of villages are located within the land use and agriculture study area including Barmston, Fraisthorpe, Lissett, Gembling, Foston on the Wolds, Brigham, Scarborough, Leconfield, Cherry Burton, Bishop Burton, Walkington and Bentley. The major historical and population centre of Beverley also sits partially within the search area. However, the onshore ECC is routed around these centres of population specifically to avoid direct impacts.
- 6.7.2.5 There are several recreational receptors and many commercial entities within the land use and agriculture study area that are predominantly situated within the towns, villages and hamlets identified above. Several examples of recreational facilities in close proximity to the ECC include those set out below with many more within Beverley and the surrounding area:
- Leconfield Recreational Club;
  - Cherry Burton Golf Course;
  - Beverley Clay Target Centre;
  - Hill Top Caravan Storage;
  - Cooke J D & Son;
  - Broadgate Farm Holiday Cottages; and
  - The Sandwich Shack.
- 6.7.2.6 An extensive area of Ministry of Defence (MOD) land is present southeast of Lissett with the MOD Defence School of Transport (Normandy Barracks) based near Leconfield. Other land uses within the search area include onshore wind farms, sporadic plantation woodland and small-scale quarrying.

- 6.7.2.7 A number of LWSs are present in the onshore ECC land use and agriculture study area including Bryan Mills Beck LWS (to the north of Scarborough), Lake's Wood LWS (located between Bealey's and Scarborough Beck), Raventhorpe Embankment LWS (in Cherry Burton) and Jillywood Lane (located between the A164 and the OnSS site).
- 6.7.2.8 There are numerous transport networks and major 'A' and 'B' roads and single access roads that connect villages and rural towns within the land use and agriculture study area, some of which directly cut through the corridor in Cherry Burton (A1035), in addition to a disused railway line. Several areas of potentially contaminated land (i.e. landfill) are situated near the onshore ECC throughout (see [Chapter 1: Geology and Ground Conditions](#) for further details of contaminated land).

#### OnSS Site

- 6.7.2.9 The 5 km land use and agriculture study area around the OnSS site includes both rural and urban environments with existing industrial facilities also prominent nearby at Creyke Beck creating a more diverse and mixed land use picture than either the onshore ECC or landfill land use and agriculture study areas. The main centres of population include: Cottingham; Bentley; Skidby; Walkington; Woodmansey; the southern portion of Beverley; and the north-west fringes of Hull, notably Orchard Park. Where present, the rural environment is predominantly comprised of arable fields fringed by coniferous woodland.
- 6.7.2.10 A small pocket of Registered Common Land (CRoW Act, 2000) is located to the north of the NGET substation at Creyke Beck, within the area identified for the 400 kV connection to Creyke Beck.
- 6.7.2.11 Two LWSs (Birkhill Wood and Jillywood Lane) are designated on the land westwards of the OnSS temporary access track that joins from the A1079. Two further candidate LWSs are designated within 5 km: one located south of the OnSS site and located north of Cottingham (Mill Beck and Fields); and also to the north-east of Skidby, adjacent to the A164 (Drove Road).
- 6.7.2.12 Two major transport routes characterise the highway network (A164 and A1079), both of which are to be used for temporary access for the ECC and OnSS respectively. Park Lane is the only transport route that connects to the NGET substation at Creyke Beck and residential receptors to the south and south-east of the OnSS site ([Figure 6.1](#)).
- 6.7.2.13 The significant presence of the NGET substation at Creyke Beck is located within the land use and agriculture study area, with the rapid reaction gas fired Staterra Energy Creyke Beck Power Station located within close proximity to the south-west (south-east of the OnSS site).
- 6.7.2.14 A number of recreational and leisure facilities are located within the land use and agriculture study area and a number of the more prominent ones in closer proximity to the Hornsea Four boundary are identified below. Many more will exist within the 5 km search area within the population centres identified above, notably in Beverley:

- Skidby Lakes Golf Club;
- Cottingham Parks Golf and Leisure Club;
- Tudor Springs Caravan Club;
- Cottingham Caravan Storage;
- Cottingham Equestrian Centre; and
- King George V Playing Fields (Cottingham).

### 6.7.3 Agriculture

- 6.7.3.1 Agriculture in the Yorkshire and Humber region is primarily arable (including arable crops, permanent grassland and temporary grass). The average farm size of 90 ha is slightly greater than the English average of 85 ha. Cereal farming predominates, with wheat, barley and oil seed rape as common crops. Alongside cereal farming, root crops, potatoes and field vegetables are grown. Some livestock farming is also present in the region, principally cattle, pigs, poultry and sheep (Defra, 2016).
- 6.7.3.2 The walkover survey from February 2019 confirmed that the majority of land use within the land use and agriculture study area comprised arable land predominantly sown with winter crop (such as *Brassica spp.*), ploughed, or under winter cover.
- 6.7.3.3 For further details on the current agricultural land use and associated crops, reference should be made to [Volume 6, Annex 3.1: Extended Phase 1 Habitat Survey Report](#).
- 6.7.3.4 Across England and Wales, the ALC has been implemented to classify agricultural land on a regional level in terms of both its quality and versatility. The ALC classification is presented as a national strategic map and divided into five grades (MAFF, 1988) as well as 'Non-Agricultural' and 'Urban' land.
- 6.7.3.5 The 'best and most versatile' (BMV) agricultural land are classified as: Grades 1, 2 and 3a. These comprise land that is most flexible, productive and efficient in response to inputs and can best deliver future crops for food and non-food uses such as biomass, fibres and pharmaceuticals. ALC grades 3b, 4 and 5 are considered less productive, although land designated as such may hold value in relation to nature conservation and landscape interests.
- 6.7.3.6 The ALC underpins the principles of sustainable development, and is used by Defra, and others, for determining the quality of farmland and providing advice to local planning authorities, developers and the public if a development is proposed on agricultural land or other 'greenfield' sites that could grow crops.
- 6.7.3.7 The Land Management Action Plan (ERYC, 2011) identified that more than 90% of ERYC's agricultural land is considered of excellent or good quality (ALC Grades 2 and 3a). [Figure 6.2](#) identifies the ALC within the land use and agriculture study area.

6.7.3.8 The Hornsea Four onshore development area characterises a series of contrasting ALC grades including:

- Grade 2 covers the greatest onshore project area representing 66.06% of the total onshore Hornsea Four area, followed by Grade 3 covering 33.93% of the onshore Hornsea Four area (see [Figure 6.2](#) and [Table 6.7](#)); and
- It should be noted that within the wider ERYC area, both Grade 2 and Grade 3 land represents a substantial coverage of the overall land (42.84 % and 43.70 % respectively).

**Table 6.7: ALC Classifications within each Onshore Hornsea Four Area.**

ALC Grade	Landfall		Onshore ECC		OnSS Site		Hectares (Ha)	Onshore Project Area % ALC grade land
	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)		
2	13.87	20.75 %	239.77	66.04 %	89.48	100 %	343.12	66.06 %
3	52.96	79.21 %	123.29	33.96 %	0	0 %	176.25	33.93 %
<b>Total</b>	<b>66.83</b>	<b>100 %</b>	<b>363.06</b>	<b>99.96 %</b>	<b>89.48</b>	<b>100 %</b>	<b>519.37</b>	<b>99.99 %</b>

### Landfall

6.7.3.9 Grade 3 soils predominate here comprising 79.2% of the total landfall area (not including the beach), with Grade 2 soils accounting for the remaining 20.75% of total landfall area ([Table 6.7](#)).

### Onshore ECC

6.7.3.10 The onshore ECC is directly comprised of both ALC Grades 2 (66.04%) and 3 land (33.96%), covering a combined area of 363.06 ha. This represents 0.23 % and 0.11 % of all Grade 2 and 3 land respectively within the jurisdiction of ERYC. It should be noted that Grade 2 land predominates south of Scarborough.

6.7.3.11 Cottingham and Beverley are both defined as 'Urban' land by the ALC and comprise 4.91 % of the total ALC within the jurisdiction of ERYC. Areas of 'Non-Agricultural' land also exist within the land use and agriculture study area, notably to the immediate west of Beverley and also east of the onshore ECC on the outskirts of Leconfield (A164). This second area that has been identified by ERYC to be a mineral safeguarding area as well as potential contaminated land.

### OnSS Site and 400kV ECC

6.7.3.12 The land within the OnSS site comprises entirely of ALC Grade 2 land and overall covers an area of 89.48 ha (including temporary construction area, permanent OnSS site, access tracks and the 400kV export cable corridor search area) ([Figure 6.2](#)) and comprises 0.08 % of the total ALC Grade 2 within the ERYC boundary.

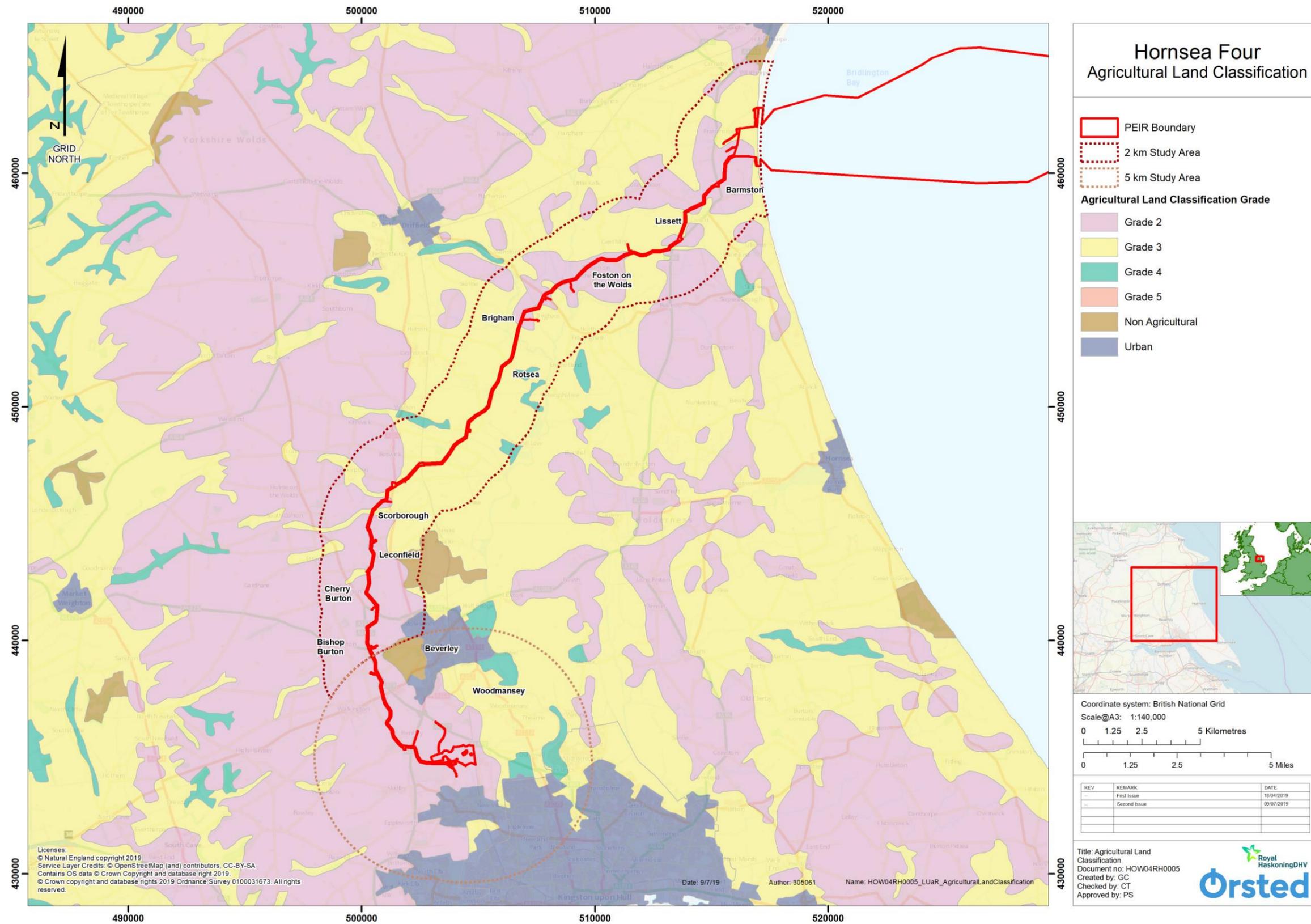


Figure 6.2: Agricultural Land Classifications within the Onshore Project Area (not to scale).

## 6.7.4 Soil Types and Distribution

- 6.7.4.1 This section provides a description of the soil types within the land use and agriculture study area and has been informed using classifications taken directly from the NSRI ([Table 6.8](#)).
- 6.7.4.2 The Hornsea Four onshore development area characterises a series of contrasting soil profiles as listed in [Table 6.8](#). The soils along the onshore ECC and within the OnSS site range from low to high fertility (without the addition of fertilizers) and low to moderate fertility at the landfall.

**Table 6.8: Soil types within the Onshore Project Area.**

Soil type	Typical habitats	Land cover	Texture	Drainage type	Natural fertility	Expected crops	Distribution of Soils
Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils	Seasonally wet pastures and woodlands	Grassland and arable some woodland	Loamy and clayey	Impeded drainage	Moderate	Mostly suited to grass production for dairying or beef; some cereal production often for feed. Timeliness of stocking and fieldwork is important, and wet ground conditions should be avoided at the beginning and end of the growing season to avoid damage to soil structure. Land is tile drained and periodic moling or subsoiling will assist drainage	Landfall (within the temporary access track north of Conygarth Hill). Sporadic land pockets distributed along the onshore ECC including Gembling, Foston on the Wolds, Scarborough, Arram, as well as the permanent OnSS site.
Freely draining, slightly acidic loamy soils	Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands	Arable and grassland	Loamy	Freely draining	Low	Suitable for range of spring and autumn sown crops; under grass the soils have a long grazing season. Free drainage reduces the risk of soil damage from grazing animals or farm machinery. Shortage of soil moisture most likely limiting factor on yields, particularly where stony or shallow	Landfall, including the temporary access tracks, compound areas and the landfall connection works before connecting onto Fraisthorpe beach). Along the entire extent of the coastline, inland of Ulrome Sands and Barmston. An area stretching either side of the A165 in Lissett.
Slightly acidic loamy and clayey soils with impeded drainage	Wide range of pasture and woodland types	Arable and grassland	Loamy some clayey	Slightly impeded drainage	Moderate to high	Reasonably flexible but more suited to autumn sown crops and grassland; soil conditions may limit safe groundwork and grazing, particularly in spring	The onshore ECC south of Leconfield, through to Cherry Burton, Bishop Burton, Bentley and through to the temporary storage area at the OnSS site.

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Soil type	Typical habitats	Land cover	Texture	Drainage type	Natural fertility	Expected crops	Distribution of Soils
Loamy and sandy soils with naturally high groundwater and a peaty surface	Wet meadows	Mostly arable	Peaty	Naturally wet	Low to high	Cereals, roots, potatoes and field vegetables provided groundwater is controlled. Ease of working and winter harvesting, which can be damaging to structure, dependent on texture and drainage of subsoil. Irrigation needed on lighter soils	Three sections of the onshore ECC located east of Wilfholme, north of Scarborough.
Loamy and clayey floodplain soils with naturally high groundwater	Wet flood meadows with wet carr woodlands in old river meanders	Grassland some arable	Loamy and clayey	Naturally wet	Moderate	Productive grassland provided drainage is maintained. Risk of poaching and soil damage early and late in the grazing season. Cereal production where flood risk is low	Northern extent of the onshore ECC that crosses over the River Hull at Brigham Ings. As well as a section of the ECC that borders the land west of Rotsea.
Freely draining lime-rich loamy soils	Herb-rich chalk and limestone pastures; lime-rich deciduous woodlands	Arable with grassland at higher altitude	Loamy	Freely draining	Lime-rich	Well suited to spring and autumn-sown cereals and other crops including grass but the land is mostly nitrate vulnerable	Onshore ECC directly north of Scarborough that intersects the Beverley Road (A164), as well as the entire land covering the 400kV ECC search area.

### 6.7.5 Stewardship Schemes

6.7.5.1 This section presents information relating to the various land or agri-environment stewardship schemes present in the land use and agriculture study area. It should be noted that where areas of impact are identified these relate to direct impacts where a stewardship scheme interacts with the PEIR boundary.

6.7.5.2 The Environmental Stewardship Scheme (ESS) was driven and built upon the existing Environmentally Sensitive Areas Scheme (ESAS) and the Countryside Stewardship Scheme (CSS). The aim of the ESS is to protect, maintain and conserve the environmental landscape and associated wildlife. On behalf of Defra, Natural England (2012) are responsible for driving this scheme and providing an incentive for effective land management to farmers and land managers in England through funding initiatives.

6.7.5.3 The overall objectives of the ESS include:

- Protection of wildlife and their habitats (including livestock and crops);
- Preservation of the traditional landscape character;
- Conservation of historic features and their setting; and
- Ensure the land is well managed.

6.7.5.4 The ESS is underpinned by three schemes:

- **Entry Level Stewardship (ELS):** open to farmers to maintain their land in Good Agricultural and Environmental Condition (GAEC) through the adoption of management options to suit each farm type;
- **Organic Entry Level Stewardship (OELS):** open to farmers whose land is wholly or in part organically managed but not already receiving aid under the Organic Aid Scheme (OAS). Also includes 'Uplands Entry Level Stewardship (Uplands ELS)'; and
- **Higher Level Stewardship (HLS):** provide significant environmental benefits with significant environmental interest. Incorporates management of both the ELS and OELS.

6.7.5.5 ESS directly covers 87.23 ha of land within the Hornsea Four onshore development area (see [Figure 6.3](#)), comprising almost entirely of ELS and HLS, with a small proportion under OELS (0.03 ha), ([Table 6.9](#)). The coverage of ESS within the Hornsea Four onshore development area comprise 0.24% of the total ESS land within the ERYC jurisdiction.

6.7.5.6 Different to ESS, the CSS focusses more so on land management. These schemes have also been identified in areas within the Hornsea Four onshore development area ([Figure 6.3](#)) and comprise 0.16% of the total CSS land within the ERYC jurisdiction.

**Table 6.9: Stewardship Schemes within the Onshore Project Area.**

Scheme	All Onshore Elements		Landfall		Onshore ECC	
	Area (ha)	Area (%)	Area (ha)	Area (%)	Area (ha)	Area (%)
<i>ESS</i>						
ELS, including HLS Schemes	87.20	53.81	24.40	36.51	62.80	17.30
OELS Schemes	0.03	0.01%	0	0%	0.03	0.01%
<b>Total ESS</b>	<b>87.23</b>	<b>53.82%</b>	<b>24.40</b>	<b>36.51%</b>	<b>62.83</b>	<b>17.31%</b>
<i>CSS</i>						
Higher Tier-	17.57	4.84%	0	0%	17.57	4.84%
Middle-Tier	38.64	11.32%	0.55	0.83%	38.08	10.49%
Agreement by Natural England	28.20	21.41%	0	0	12.01	3.31%
<b>Total CSS</b>	<b>84.41</b>	<b>37.57%</b>	<b>0.55</b>	<b>0.83%</b>	<b>67.66</b>	<b>18.64%</b>

6.7.5.7 The six elements of the CSS relevant to Hornsea Four comprise:

- **Mid-Tier:** achieve simple effective environmental benefits, including improving water quality;
- **Wildlife Offers:** support wildlife in respect to improved habitats for farmland birds and pollinating insects;
- **Higher Tier:** environmental protection of significant sites, commons and woodlands; and
- **Capital grants:** provides environmental and landscape benefit through improving hedgerows and boundaries and are valid for two years.
- **Woodland Support:** supports the creation, management and tree health grant; and
- **Catchment sensitive Farming:** provides freely available training on reducing water use and air pollution generated by farming operations. The scheme also provides support during applications for capital grants for Mid-Tier schemes.

### Landfall

6.7.5.8 ELS plus HLS schemes together cover 24.40 ha at landfall (Table 6.9). These schemes are under agreement in Bridlington, within the following areas:

- Land that falls within the direct footprint of the onshore ECC at the landfall before connecting to the landfall compound area; and
- Landfall compound area at Watermill Grounds.

## Onshore ECC

- 6.7.5.9 Middle Tier Management CSS comprise 0.55 ha land that falls within the direct footprint of the onshore ECC at the landfall (C N Warkup, Beeford), before connecting to the landfall compound area. This scheme further extends south of the onshore ECC to Barmston ([Figure 6.3](#)).
- 6.7.5.10 ELS plus HLS schemes cover 62.80 ha of land that intersects the onshore ECC through Brigham, Wilfholme and Scarborough (Bealey's Beck), as well as towards the southern extent of the onshore ECC at Walkington and Bentley.
- 6.7.5.11 Total CSS (both Middle and Higher Tier, and land under agreement by Natural England) cover 67.66 ha of land directly crossed by the onshore ECC. Land covered by Higher Tier Management schemes are crossed by the onshore ECC in the between Foston on the Wolds and Brigham (Carr House Farm), as well as in the vicinity of the A1035, north-west of Beverly (Molescroft Farm).
- 6.7.5.12 CSS land under agreement by Natural England is crossed by the onshore ECC west of Leconfield.

## OnSS Site

- 6.7.5.13 The OnSS site is not located on any land covered by an ESS.
- 6.7.5.14 The land adjacent to the temporary storage area (Quarryside Farms), that is directly crossed by the onshore ECC connecting to the permanent storage area falls under Middle Tier Management CSS.
- 6.7.5.15 Land under CSS agreement by Natural England also falls within the 400 kV ECC, north-east of the permanent OnSS site ([Figure 6.3](#)).

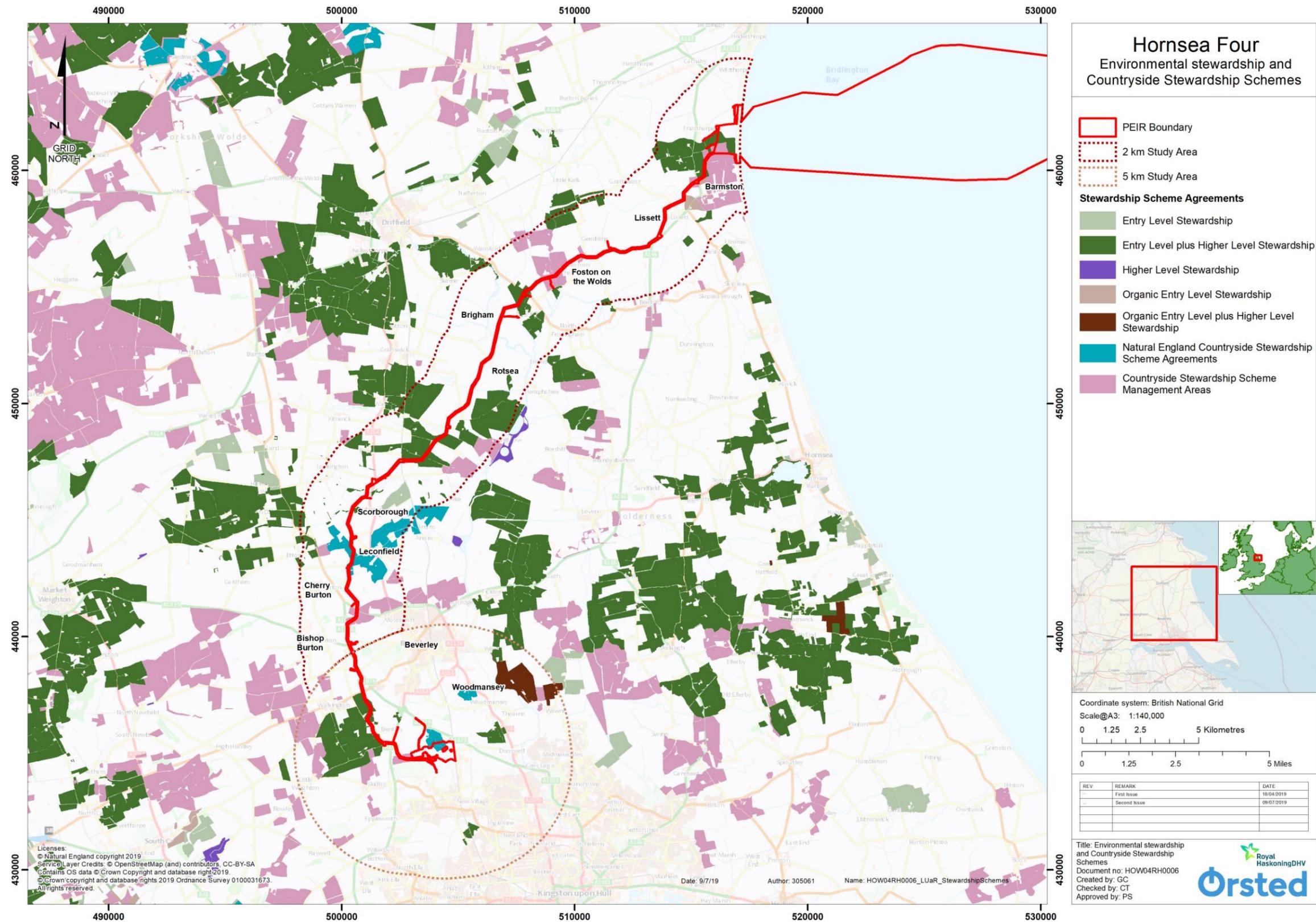


Figure 6.3: Environmental Stewardship Schemes within the Onshore Project Area (not to scale).

## 6.7.6 Public Rights of Way and Cycle Routes

6.7.6.1 Twenty-eight crossing points for PRow (Public Rights of Way) and cycle routes have been identified. These comprise of 19 footpath, seven bridleway and two cycle path crossings. **Table 6.10** identifies all PRow crossings and the locations of these crossing points and PRow are illustrated in **Figure 6.4** to **Figure 6.8**. A number of additional PRow are located within the land use and agriculture study area whilst no direct impact will occur to such features there is the potential for secondary effects to users, most notably in the vicinity of the OnSS where there is a relatively dense PRow network (see **Figure 6.8**).

**Table 6.10: PRow Crossing Points.**

Project Reference	PRow Name	Description
LF_A3_ACC_PW_004	Barmston Footpath No. 4	Footpath
LF_A4_PW_005	Barmston Footpath No.4	Footpath
ECC_PW_012	Barmston Footpath No. 3	Footpath
ECC_PW_014	Barmston Footpath No. 2	Footpath
ECC_PW_058	Foston on the Wolds Footpath No. 10	Footpath
ECC_PW_094	Foston on the Wolds Footpath No.12	Footpath
ECC_PW_099	Foston on the Wolds Footpath No. 12	Footpath
ECC_PW_130	Foston on the Wolds Bridleway No. 9	Bridleway
ECC_PW_136	Foston on the Wolds Bridleway No. 6	Bridleway
ECC_PW_150	Hutton Cranswick Footpath No. 10	Footpath
ECC_PW_153	Watton Footpath No. 18	Footpath
ECC_PW_165	Watton Bridleway No. 13	Bridleway
ECC_PW_191	Beswick Bridleway No. 23	Bridleway
ECC_LC_PW_205	Lockington Footpath No. 8	Footpath
ECC_PW_217	Leconfield Footpath No.1	Footpath
ECC_PW_219	Leconfield Bridleway No. 2	Bridleway
ECC_PW_224	Leconfield Footpath No. 7	Footpath
ECC_PW_225	Leconfield Footpath No. 7	Footpath
ECC_PW_229	Leconfield Bridleway No. 9	Bridleway
ECC_PW_232	Leconfield Footpath No. 10	Footpath
ECC_PW_233	Leconfield Footpath No. 11	Footpath
ECC_PW_236	Leconfield Bridleway No. 12	Bridleway
ECC_PW_257	Cherry Burton Footpath No. 2	Footpath
ECC_PW_265	Cherry Burton Footpath No. 3	Footpath
ECC_PW_272	Yorkshire Wolds	Cycleway (Sustrans National Route)
ECC_PW_305	Yorkshire Wolds	Cycleway (Sustrans National Route)
ECC_PW_318	Walkington Footpath No. 9 (Moor Lane)	Footpath
SS_PW_363	Skidby Footpath No. 16	Footpath

6.7.6.2 The Marine and Coastal Access Act 2009 (MCAA) introduced a duty on Natural England (NE) to develop a coastal path that improves recreational public access on foot to the English coast. The aspiration is for this English Coast Path (which would be the longest managed and waymarked coastal path in the world) to be a continuous path around the whole English coast. In some areas the path is now open with access rights but along the coast within the landfall area there is no currently designated coastal route. Public access between Easington to Filey Brig is expected to be available by 2020 (Natural England, 2019). During the Human Environment Technical Panel Meeting (May, 2019) ERYC confirmed the coastal path is currently within the planning process with few details available in the public domain. At this stage it is assumed that the path will run parallel with the coast either on, or in close proximity to, the beach. Further details will be sought in relation to the coastal path and assessment confirmed in the ES at DCO, based on available information.

6.7.6.3 The two cycle routes directly crossed by the onshore ECC ([Figure 6.7](#) and [Figure 6.8](#)) include both traffic-free and on-road routes as part of the National Cycle Network:

- North-west of Beverly along the A1035 (Malton Road) - Yorkshire Wolds No.161 (Long Distance Route 1); and
- North of Cottingham - Yorkshire Wolds No.1. (Long Distance Route 1).

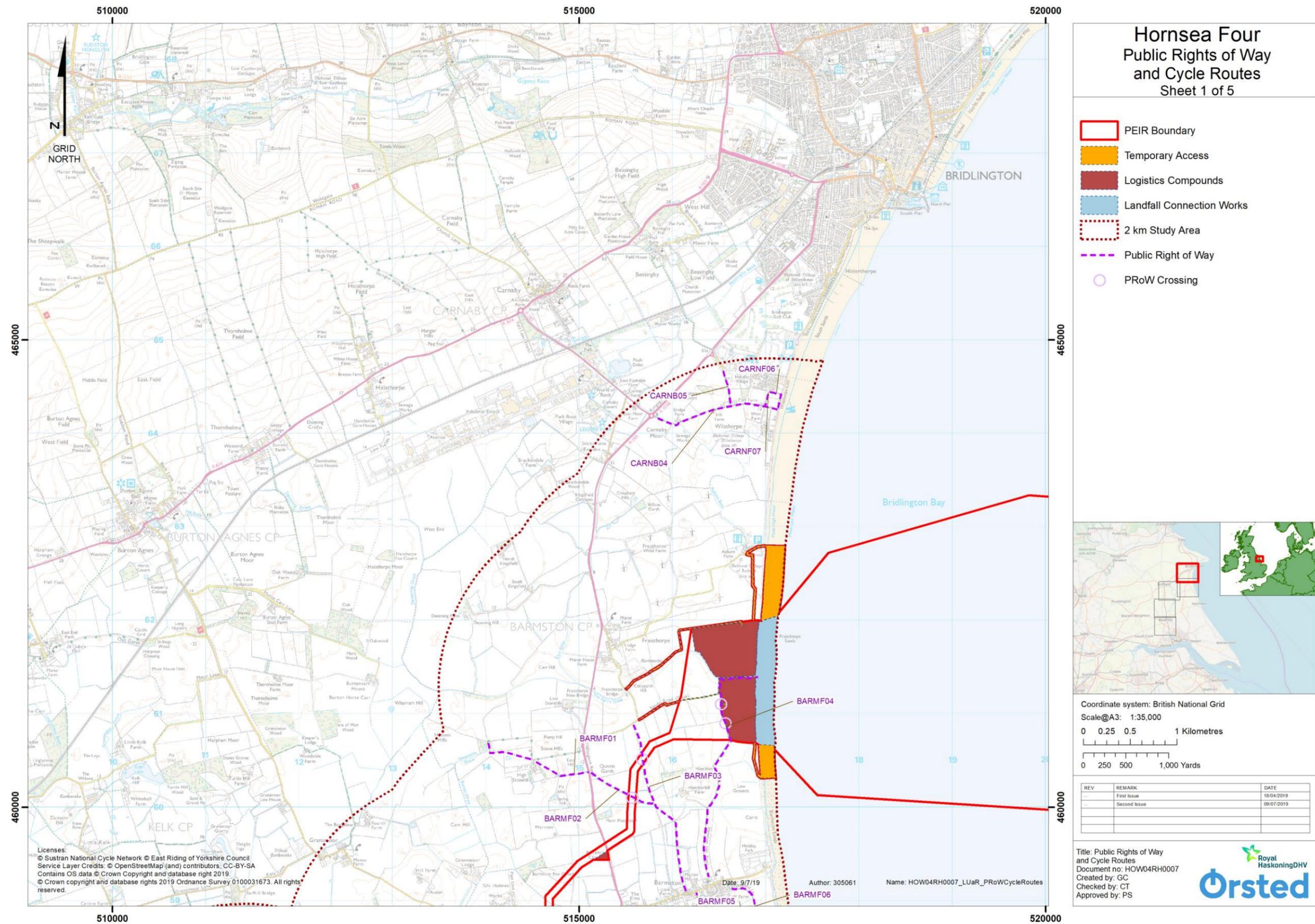


Figure 6.4: Public Rights of Way and Cycle Routes win the Onshore Project Area Sheet 1 (not to scale)

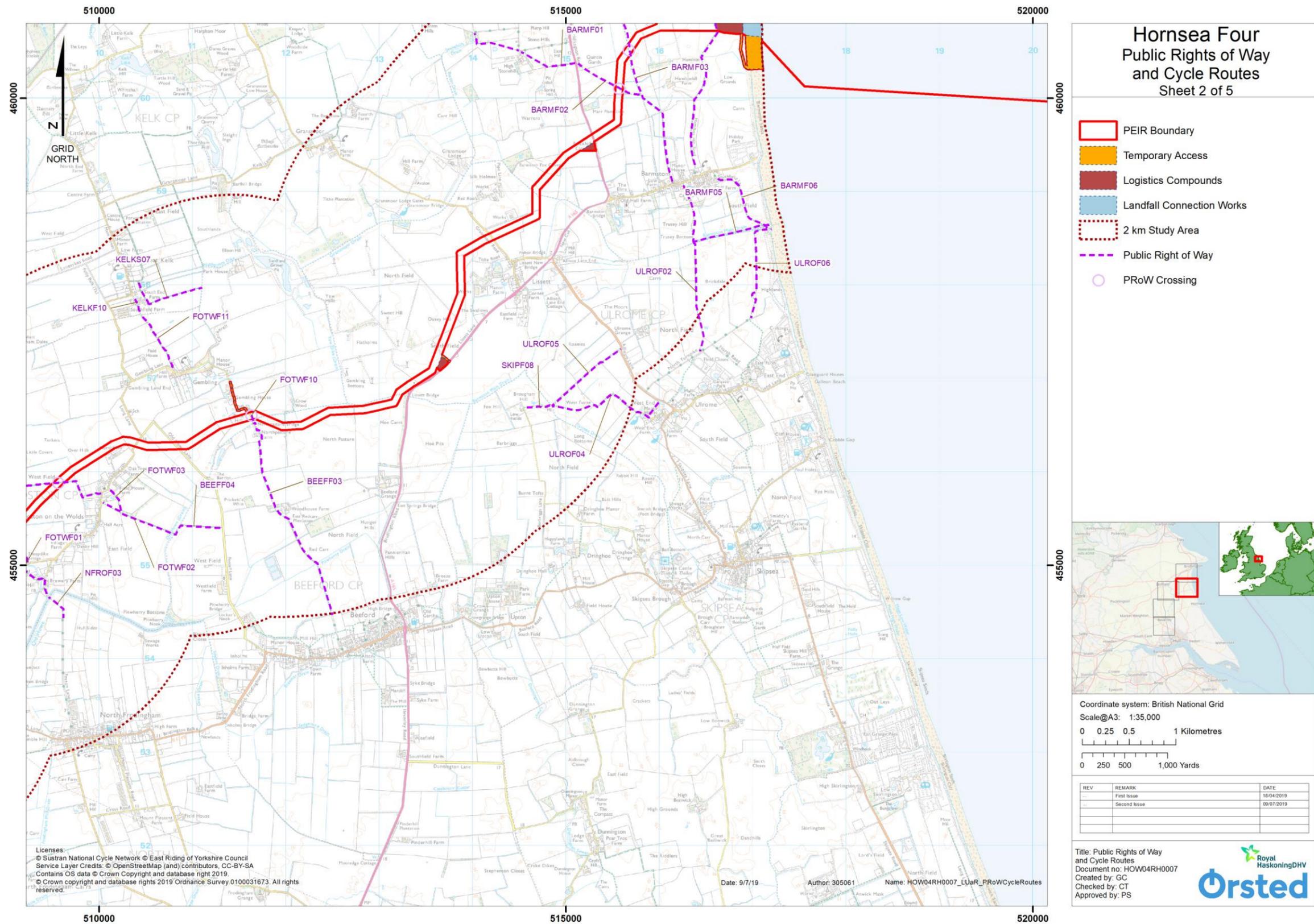


Figure 6.5: Public Rights of Way and Cycle Routes win the Onshore Project Area Sheet 2 (not to scale).

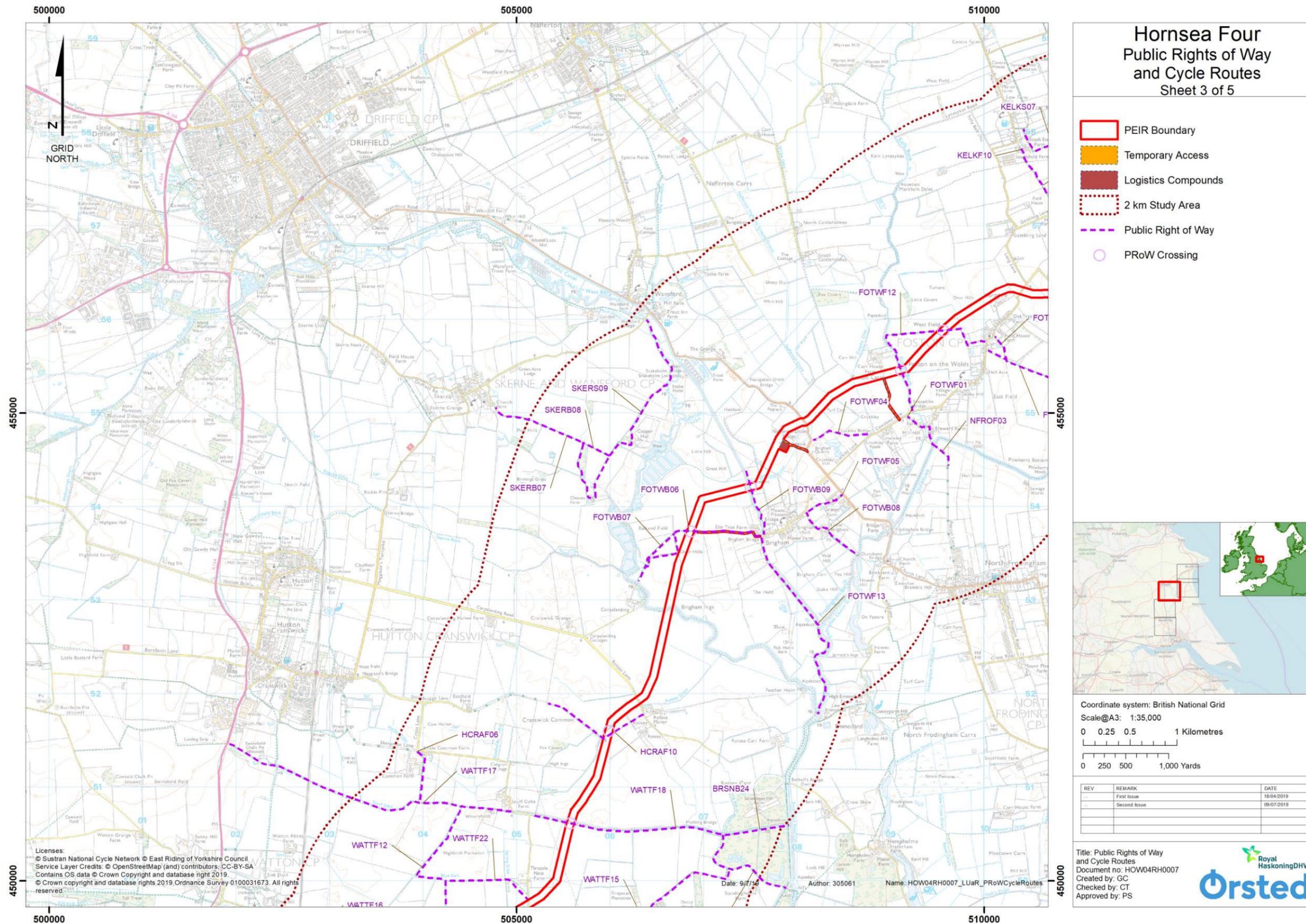


Figure 6.6: Public Rights of Way and Cycle Routes win the Onshore Project Area Sheet 3 (not to scale).



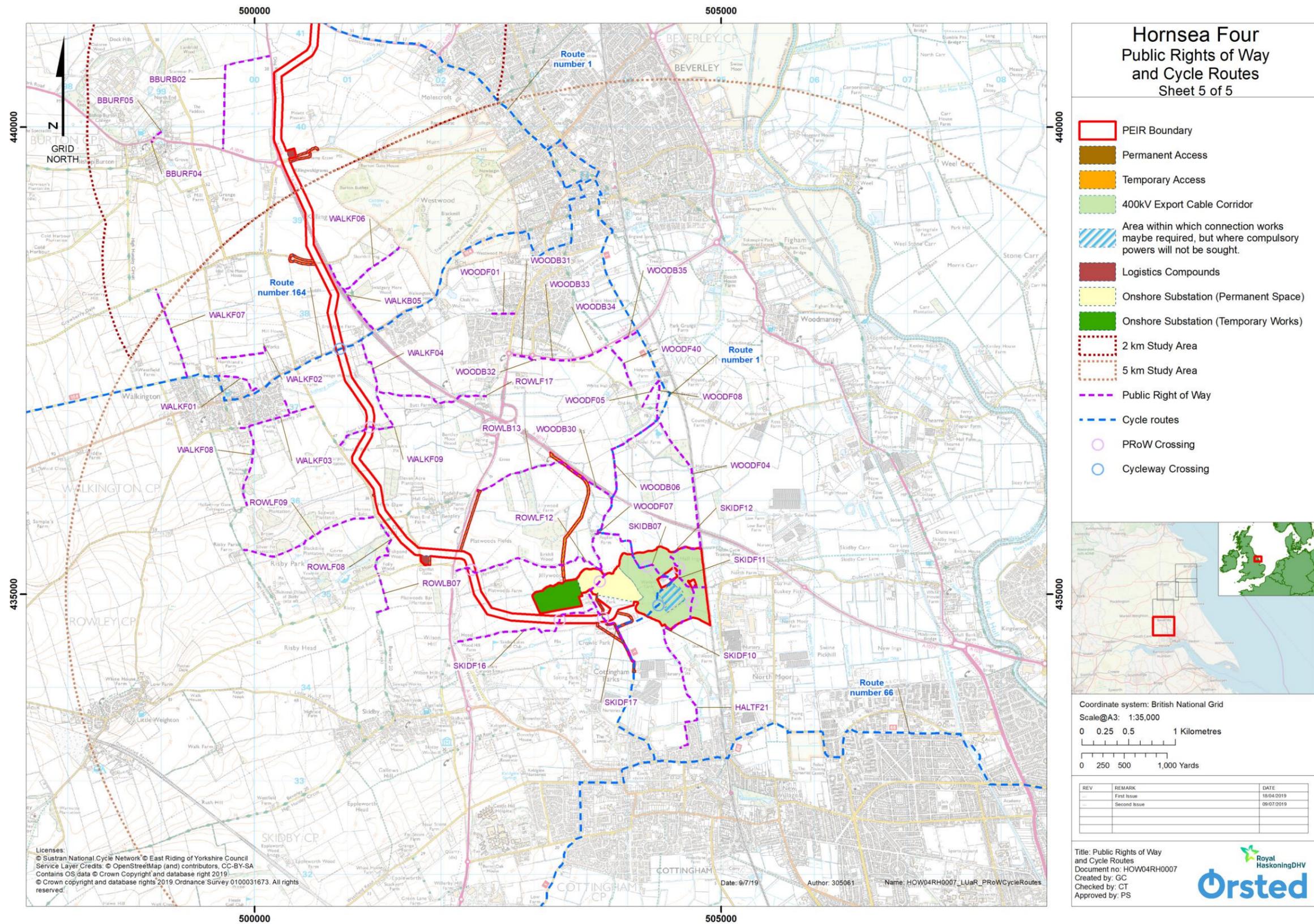


Figure 6.8: Public Rights of Way and Cycle Routes in the Onshore Project Area Sheet 5 (not to scale).

### 6.7.7 Predicted Future Baseline

- 6.7.7.1 The baseline conditions presented within this chapter will be subject to change over the duration of Hornsea Four's lifetime (35 years). In the long term, land use and cover are continually evolving and being modified given their close interlink with natural processes and are further driven through climate forcing and change (Wu *et al.*, 2013). However, over the 35 year project duration under consideration it is anthropogenic drivers that are more likely to drive macro-scale land use change (i.e. through population growth or changes in distribution, changes to land use management and development practices, and responding to economics – especially those pertaining to agriculture).
- 6.7.7.2 An increase in population, increasing urbanisation and improvement in living standards, may increase pressure for more productive agriculture and could lead to the loss of grassland areas and a continued increase in the use of industrial fertiliser and other agri-chemicals to ensure continued high crop yields. Such changes in land cover and associated agricultural practise may modify and alter natural ecosystem functions and processes, including the underground water table, associated water quality, as well as the area, distribution and quality of dependant wildlife habitats and their biodiversity (Sohl *et al.*, 2012).
- 6.7.7.3 Between 1991 and 2017, the population of ERYC has steadily increased from 292,007 to 338,061 and this is projected to increase to 361,933 by 2039 (East Riding Data Observatory, 2017). Given the current baseline environment within the land use and agriculture study area, it is likely the demand from population growth will drive expansion of the urban areas and result in the loss of some agricultural land replaced, for example, by small housing developments.
- 6.7.7.4 Further to this, agricultural patterns are linked to agricultural policy and available subsidy/farm payment structures. Brexit and future changes to UK agricultural policy outside the EU are unknown at the time of writing but are likely to influence agricultural practise in the area in future years.

### 6.7.8 Data Limitations

- 6.7.8.1 The key limitation to characterising the land use and agricultural baseline at this stage has been the restricted land access available for the February 2019 walkover survey with approximately 70% of the onshore ECC and OnSS site being granted land access. Additionally, no access was granted for the landfall search area at that time. Continued efforts are being made to get access to inform the ES. There is a lack of publically available detail on the English Coast Path to inform this PEIR but further details will be collected where possible on routing before the ES is completed and appropriate assessment made. An assumption has been made that the path runs parallel to the coast in close proximity to it in this PEIR.
- 6.7.8.2 Limitations have been managed by using secondary data obtained from ERYC (PRoW and cycle routes), NSRI (soil classifications) and NE (ALC, ESS, LWS and Registered Common Land) as well as publically available aerial imagery to inform the baseline in this PEIR. The absence

of visual and non-intrusive data is not considered to affect the assessment or the mitigation identified to date to any significant degree and is therefore not a significant factor in this assessment. However, further ground truthing will take place before the final ES is produced and DCO application made.

## 6.8 Project basis for assessment

### 6.8.1 Impact register and impacts “scoped out”

6.8.1.1 A number of impacts are proposed to be “scoped out” of the PEIR assessment for land use and agriculture. This is based on the information provided in the baseline environment, the project description outlined in [Volume 1, Chapter 4: Project Description](#) and the Commitments in [Volume 4, Annex 5.2: Commitments Register](#). These impacts are outlined, together with a justification for scoping them out in [Table 6.11](#). Further detail is provided in [Volume 4, Annex 5.1: Impacts Register](#).

6.8.1.2 Please note that the term “scoped out” relates to the Likely Significant Effect (LSE) in EIA terms and not “scoped out” of the EIA process per se. All impacts “scoped out” of LSE are assessed for magnitude, sensitivity of the receiving receptor and conclude an EIA significance in the Impacts Register (see [Volume 4, Annex 5.1](#)). This approach is aligned with the Hornsea Four Proportionate approach to EIA (see [Volume 1, Chapter 5: EIA Methodology](#)).

**Table 6.11: Land Use and Agriculture Impact Register**

Project activity and impact	Likely significance of effect	Approach to assessment	Justification
Permanent disruption / reduction of land: Operation and maintenance phase  Impacts of operation and maintenance of ECC and OnSS may affect agricultural land and farm holdings, resulting in permanent disruption or reduction in land available for farming activities. <a href="#">(LUA-O-6)</a>	No likely significant effects	Scoped out	<p><i>“The Inspectorate agrees that significant effects from disruption from reduction of land are not likely during the operational phase of Hornsea Four, subject to the implementation of the proposed reinstatement as described in Co10 to be secured by inclusion in the draft Code of Construction Practice and DCO</i></p> <p><i>Therefore, it is agreed that this matter can be scoped out of the ES”. (PINS Scoping Opinion, November 2016, ID:4.18.2)</i></p> <p>The potential effects resulting from the Transition Joint Bays, Joint Bays s and Link Boxes would be fragmented and would not result in the direct loss or severance of fields used for agricultural use.</p>

Project activity and impact	Likely significance of effect	Approach to assessment	Justification
			<p>The OnSS comprises the only permanent above ground infrastructure which would materially impact agricultural land. The site of the permanent infrastructure is under 20ha and would therefore not result in a significant effect.</p>
<p>Temporary disruption / reduction in land: Decommissioning phase</p> <p>Impacts of decommissioning above ground installations may temporarily affect Agricultural Land and farm holdings, resulting in temporary disruption or reduction in land available for farming activities. (LUA-D-7)</p>	<p>No likely significant effects</p> <p>The onshore ECC and substation search areas are on agricultural land and areas considered "Best and most versatile" agricultural land (ALC Grades 1, 2 and 3a). Impacts are expected to be minimal however as above ground installations are small and cabling will remain in-situ.</p>	<p>Scoped out</p>	<p>Decommissioning of the onshore infrastructure for Hornsea Four will comprise the following activities:</p> <ul style="list-style-type: none"> <li>• Buried export cables left in situ, with cable ends cut, sealed and securely buried. Partial removal of cables at landfall occur for aluminium/steel recycling;</li> <li>• Joint Bays and Link boxes will typically be left in situ, or removed if feasible; and</li> <li>• The OnSS above ground electrical equipment and infrastructure will be removed, along with building foundations and security fencing. The site will be returned to its previous condition.</li> </ul> <p>Further details will be provided and secured within a Decommissioning Plan, agreed with stakeholders prior to decommissioning commencing. The construction of Hornsea Four presents the highest potential for significant environmental effects. Impacts during decommissioning would result in an effect of equal significance, at worst. Primary, tertiary and secondary mitigation measures that are necessary to reduce significant effects during construction to acceptable levels would be secured for decommissioning activities, if relevant, and noted within technical chapters. In line with the proportionate approach to EIA, effects during decommissioning are therefore scoped out of the EIA for Hornsea Four.</p>

**Notes:**

Grey - Potential impact is scoped out and both PINS and Hornsea Four agree.

Red – Potential impact is scoped out with no consensus between PINS and Hornsea Four at EIA Scoping.

## 6.8.2 Commitments

6.8.2.1 Hornsea Four has committed to several commitments (including primary design principles inherent as part of the project). These include; installation techniques and engineering designs/modifications as part of their pre-application phase, to eliminate impacts or reduce impacts as far as possible. Further Commitments (such as adoption of best practice guidance (tertiary commitments)) are embedded as an inherent aspect of the EIA process and will be set out in the CoCP as secured by the DCO).

6.8.2.2 The commitments adopted by Hornsea Four in relation to land use and agriculture are presented in [Table 6.12](#).

**Table 6.12: Relevant Land Use and Agriculture Commitments.**

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
Co7	Primary: The temporary work area associated with onshore export cable corridor will be 80m working width to minimise the construction footprint, except the Network Rail Crossing near Beswick where the footprint is extended to 120m to facilitate HDD of the railway line. The permanent onshore export cable corridor width will be 60m except the Network Rail Crossing near Beswick where the footprint is extended to 120m to facilitate HDD of the railway line.	DCO Works Plan - Onshore
Co8	Tertiary: Stockpiles will be a maximum of 2m high to avoid compaction from the weight, in line with DEFRA 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298 or the latest relevant available guidance.	DCO Requirement 16 (CoCP)
Co10	Tertiary: Post-construction, the working area will be reinstated to pre-existing condition as far as reasonably practical in line with DEFRA 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298 or latest relevant available guidance.	DCO Requirement 16 (CoCP)  DCO Requirement 19 (Restoration of land used temporarily for construction)
Co19	Tertiary: An Onshore Infrastructure Drainage Strategy will be developed for the permanent operational development along the onshore cable corridor and the onshore substation, and will include measures to ensure that existing land drainage is reinstated and maintained, and measures to limit discharge rates and attenuate flows such that pre-development run-off rates to surrounding land are retained. The Onshore Infrastructure Drainage Strategy will be developed in consultation with the Environment Agency,	DCO Requirement 12 (Surface and foul water drainage)

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
	Lead Local Flood Authority and relevant Internal Drainage Board as appropriate.	
Co28	Primary: Joint Bays will be completely buried, with the land above reinstated except where access will be required from ground level, e.g. via link box chambers and manholes.	DCO Requirement 16 (CoCP)  DCO Requirement 19 (Restoration of land used temporarily for construction)
Co43	Secondary: All temporary and permanent working areas of the onshore Export Cable Corridor (ECC), logistics compounds and the onshore substation site will be clearly marked and secured with appropriate fencing.	DCO Requirement 16 (CoCP) (relevant to temporary fencing)  DCO Requirement 11 (Fencing and other means of enclosure) (relevant to permanent fencing)
Co63	Primary: The haul road will be installed within the works area of the onshore Export Cable Corridor (ECC) to minimise impacts during construction on agricultural land.	DCO Requirement 16 (Code of construction practice)
Co68	Secondary: All logistics compounds will be removed and sites restored to their original condition when construction has been completed.	DCO Requirement 16 (CoCP)  DCO Requirement 19 (Restoration of land used temporarily for construction)
Co79	Primary: Severance to PRoW will be temporary where possible, and appropriate temporary diversions, gated crossings and signage will be provided during construction. PRoW will be reinstated as soon as reasonably practical. Where permanent severance to PRoW is necessary, permanent diversions of such routes will be applied.	DCO Requirement 16 (CoCP)
Co114	Tertiary: Good practice air quality management measures will be applied where it is relevant, as described in Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction 2014, version 1.1, or latest relevant available guidance.	DCO Requirement 16 (CoCP)
Co123	Tertiary: Based on noise modelling results, where noise has the potential to cause significant adverse effects, mufflers and acoustic barriers will be used where HDD is being undertaken.	DCO Requirement 16 (CoCP)

Commitment (Co) Identification reference	Measure Proposed	How the measure will be secured
Co124	Tertiary: A Code of Construction Practice (CoCP) will be developed in accordance with the outline CoCP. The outline CoCP will include measures to reduce temporary disturbance to residential properties, recreational users, and existing land users.	DCO Requirement 16 (CoCP)
Co127	Tertiary: An Onshore Decommissioning Plan will be developed prior to decommissioning. The Onshore Decommissioning Plan will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure and details relevant to pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant available guidance.	DCO Requirement 22 (onshore decommissioning)
Co133	Primary: The onshore ECC will be routed to avoid residential receptors by at least 50 m.	DCO Works Plan – Onshore
Co134	Primary: Cable installation works at the landfall area will be located at least 200 m from residential receptors	DCO Works Plan – Onshore
Co158	Secondary: Impacts on the English Coast Path national route will be minimised by avoiding impacts through site design and phasing within working constraints for the landfall construction. In addition, Co79 will be applied to the English Coast Path national route.	DCO Requirement 16 (CoCP)
Co165	Secondary: Where PRoWs are required to be closed during the construction of the onshore connection works, they will not be closed for any longer than three months at any one time, or for six months in total over the whole construction period. Where closures are required for longer period, East Riding of Yorkshire Council will be informed in writing.	DCO Requirement 16 (CoCP)

## 6.9 Maximum Design Scenario (MDS)

6.9.1.1 This section describes the parameters on which the land use and agriculture assessment has been based. These are the parameters which are judged to give rise to the maximum levels of effect for each of the assessments undertaken. Should Hornsea Four be constructed to different parameters within the design envelope, then impacts would not be any greater than those set out in this PEIR using the MDS presented in [Table 6.13](#).

**Table 6.13: Maximum design scenario for impacts on land use and agriculture.**

Impact and Phase	Embedded Mitigation Measures	Maximum Design Scenario / Rochdale Envelope	Justification
<i>Construction</i>			
<p>Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)</p>	<p>Primary: Co63</p> <p>Tertiary: Co8 Co10 Co19 Co124</p> <p>Secondary: Co68</p>	<p><b>Landfall:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 32 months; and</li> <li>Landfall compound: Number: 1, Total Area: 40,000 m<sup>2</sup>, Duration: 32 months.</li> </ul> <p><b>Onshore ECC:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 30 months;</li> <li>Logistics compounds: Number: 8, Size: 140x140 m, Duration: 36 months;</li> <li>ECC: Length: 40 km (approximate), Width: 80 m, Area: 3,200,000 m<sup>2</sup>; and</li> <li>Temporary access roads: Number: 24, Width: 6 m (with 7 m passing places), Total combined length (excluding existing paved sections): 10km</li> </ul> <p><b>OnSS and Energy Balancing Infrastructure:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 36 months;</li> <li>Permanent infrastructure area: 155,000 m<sup>2</sup>;</li> <li>Temporary works area: 130,000 m<sup>2</sup>; and</li> <li>Temporary access road: Number: 1, Length: 1,600 m, Width: 15m (8m road, 7m soil storage).</li> </ul> <p><b>400 kV ECC:</b></p> <ul style="list-style-type: none"> <li>Length: 2,100 m, Width: 60 m</li> </ul>	<p>These parameters represent maximum ground disturbance conditions both in terms of potential area affected and in duration for Hornsea Four project elements that have the potential to disrupt agricultural land and farm holdings.</p> <p>Details related to the intertidal working area, and specific details on project infrastructure within the onshore working area is not relevant to this assessment. This is because the maximum extent of ground disturbance has been assessed.</p>
<p>Impacts of construction may affect recreational use of the coast through</p>	<p>Primary: Co79</p>	<p><b>Landfall:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 32 months</li> </ul>	<p>These parameters represent maximum amount of activity on the</p>

Impact and Phase	Embedded Mitigation Measures	Maximum Design Scenario / Rochdale Envelope	Justification
temporary disruption to beach access and coastal paths. (LUA-C-2)	Tertiary: Co124  Secondary: Co158 Co165	<ul style="list-style-type: none"> <li>Landfall compound: Number: 1, Total Area: 40,000 m<sup>2</sup>, Duration: 32 months</li> <li>Beach closure: 6 months within the 32 months construction period</li> <li>HDD Exit Pits: Number: 8, Area: 900 m<sup>2</sup> per exit pit, Depth: 5 m</li> <li>Temporary intertidal exit pit working area: 1,600 m<sup>2</sup> per exit pit.</li> </ul>	beach which could affect nearby recreational and other land use.
Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements). (LUA-C-3)	Primary: Co133 Co134  Tertiary: Co114 Co123 Co124	<p><b>Landfall:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 32 months</li> <li>Landfall compound: Number: 1, Total Area: 40,000 m<sup>2</sup>, Duration: 32 months</li> <li>Beach closure: 6 months spread within the 32 months construction period</li> <li>Noise levels during construction of Transition Joint Bays: 115 dB</li> </ul> <p><b>Onshore ECC:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 30 months</li> <li>Logistics compounds: Number: 8, Size: 140x140 m, Duration: 36 months</li> <li>ECC: Length: 40 km (approximate), Width: 80m, Area: 3,200,000 m<sup>2</sup></li> <li>Temporary access roads: Number: 24, Width: 6 m (with 7 m passing places), Total combined length (excluding existing paved sections): 10km</li> <li>Noise levels: Cable Installation: 108 dB, Construction of Joint Bays: 115 dB</li> </ul> <p><b>Onshore Substation and Energy Balancing Infrastructure:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 36 months</li> <li>Permanent infrastructure area: 155,000 m<sup>2</sup></li> <li>Temporary works area: 130,000 m<sup>2</sup></li> <li>- Noise levels during construction: 108 dB</li> </ul>	The MDS represents the greatest extent (spatial and temporal) of the proposed construction works which would result in noise, dust and traffic impacts.

Impact and Phase	Embedded Mitigation Measures	Maximum Design Scenario / Rochdale Envelope	Justification
		<p><b>400 kV ECC:</b></p> <ul style="list-style-type: none"> <li>Length: 2,100m, Width: 60 m</li> </ul> <p><b>Traffic Movements:</b></p> <ul style="list-style-type: none"> <li>Peak two-way daily HGV movements in one month: 1,097</li> <li>Peak two-way daily LCV movements: 368</li> </ul>	
<i>Construction and Operational Phases</i>			
<p>Impacts of construction or operation may affect National Cycle Network Routes, other PRow and promoted routes, resulting in severance, temporary diversion or closure. (LUA-C-4 and LUA-O-5)</p>	<p>Primary: Co79</p> <p>Tertiary: Co124</p> <p>Secondary: Co158 Co165</p>	<p><b>Landfall:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 32 months; and</li> <li>Landfall compound: Number: 1, Total Area: 40,000 m<sup>2</sup>, Duration: 32 months.</li> </ul> <p><b>Onshore ECC:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 30 months;</li> <li>Logistics compounds: Number: 8, Size: 140x140 m, Duration: 36 months;</li> <li>ECC: Length: 40 km (approximate), Width: 80 m, Area: 3,200,000 m<sup>2</sup>; and</li> <li>Temporary access roads: Number: 24, Width: 6 m (with 7 m passing places), Total combined length (excluding existing paved sections): 10km.</li> </ul> <p><b>OnSS and Energy Balancing Infrastructure:</b></p> <ul style="list-style-type: none"> <li>Construction duration: 36 months;</li> <li>Permanent infrastructure area: 155,000 m<sup>2</sup>;</li> <li>Temporary works area: 130,000 m<sup>2</sup>; and</li> <li>Temporary access road: Number: 1, Length: 1,600 m, Width: 15 m (8 m road, 7 m soil storage).</li> </ul> <p><b>400 kV ECC:</b></p> <ul style="list-style-type: none"> <li>Length: 2,100 m, Width: 60 m.</li> </ul>	<p>The MDS represents the greatest extent (spatial and temporal) of the proposed construction works which would result in the greatest disruption to users of PRow or cycle routes.</p> <p>It is considered that details related to intertidal working, and specific details on project infrastructure within the working area is not relevant to this assessment. This is because the maximum extent of ground disturbance has been assessed.</p>
<i>Decommissioning</i>			
Scoped out of assessment			

## 6.10 Assessment methodology

6.10.1.1 The assessment methodology for land use and agriculture is consistent with that presented in Annex C of the Hornsea Four Scoping Report (Ørsted, 2018) and subsequent consultation feedback ([Section 6.4](#)).

### 6.10.2 Impact assessment criteria

6.10.2.1 The criteria for determining the significance of effects is a two-stage process that involves defining the sensitivity of the receptors and the magnitude of the impacts. This section describes the criteria applied in this chapter to assign values to the sensitivity of receptors and the magnitude of potential impacts. The terms used to define sensitivity and magnitude are based on those used in the Design Manual for Roads and Bridges (DMRB) methodology that were adopted during Scoping, which is described in further detail in [Volume 1, Chapter 5: EIA Methodology](#).

6.10.2.2 For assessing environmental effects on land use and agriculture, the interim Advice Note 125/15 of the DRMB advises the assessment should consist of an amalgamation of DMRB, Volume 11, Section 3, Part 6: Land Use and Section 3, Part 8: Pedestrians, Cyclists, Equestrians and Community Effects.

6.10.2.3 The criteria for defining sensitivity and magnitude in this chapter are outlined in Table 6.14 and Table 6.15 respectively.

**Table 6.14: Definition of terms relating to receptor sensitivity.**

Sensitivity	Agricultural receptors	Recreational receptors
Very High	Presence of “ <i>best and most versatile land</i> ” (Grades 1,2,3a), conventionally farmed intensive arable cropping or intensive livestock systems (e.g. dairy cattle).	High importance and rarity, national scale and very limited potential for substitution.
High	Presence of land of moderate quality (Grade 3b), conventionally farmed mixed cropping and livestock systems of moderate intensity.	High or medium importance and rarity, regional scale, limited potential for substitution.
Medium	Presence of land of poor quality (Grade 4), conventionally farmed extensive livestock systems or agricultural land in non-agricultural use.	Low or medium importance and rarity, local scale with potential for substitution.
Low	Presence of land of very poor quality (Grade 5), restricted to	Very low importance and rarity, local scale.

Sensitivity	Agricultural receptors	Recreational receptors
	permanent pasture, rough grazing and/or forage crop.	

Note: Grade 3 land (both 3a and 3b) is assumed to be of 3a quality to ensure a worst-case assessment. As such, High sensitivity is not assigned within this chapter in relation to agricultural receptors.

**Table 6.15: Definition of terms relating to magnitude of an impact.**

Sensitivity	Agricultural receptors	Recreational receptors
Major	Loss of more than 50 ha of the <i>"best and most versatile"</i> agricultural land.	Loss of resource and/or quality and integrity of receptor, severe damage to key characteristics, features or elements.
	High degree of disruption to cultivation patterns and with high risk of change in land use.	
Moderate	Loss of more than 20 ha of the <i>"best and most versatile"</i> agricultural land.	Loss of resource, but not affecting integrity, partial loss of/damage to key characteristics, features or elements.
	Moderate degree of disruption to cultivation patterns with moderate risk of the change in land use	
Minor	Loss of 5 – 20 ha of the <i>"best and most versatile"</i> agricultural land.	Some measurable change in attributes, quality or vulnerability, minor loss or alteration to one (possibly more) key characteristics, features or elements.
	Minimal degree of disruption to cultivation patterns and low risk of change in land use.	
Negligible	Loss of less than 5 ha of the <i>"best and most versatile"</i> agricultural land.	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Minimal or no disruption to cultivation patterns and very low risk of change in land use.	

6.10.2.4 The significance of the effect upon land use and agriculture is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The method employed for this assessment is presented in [Table 6.16](#). Where a range of significance of effect is presented in [Table 6.16](#), the final assessment for each effect is based upon expert judgement.

6.10.2.5 For the purposes of this assessment, any effects with a significance level of minor or less have been concluded to be not significant in terms of the EIA Regulations.

**Table 6.16: Matrix used for the assessment of the significance of the effect.**

		Magnitude of Impact/Degree of Change			
		Negligible	Minor	Moderate	Major
Value, Importance, Sensitivity	Low	Not Significant	Not Significant or Minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant) or Moderate (Significant)
	Medium	Not Significant	Minor (Not Significant)	Moderate (Significant)	Moderate (Significant) or Major (Significant)
	High	Not Significant	Minor (Not Significant) or Moderate (Significant)	Moderate (Significant) or Major (Significant)	Major (Significant) or Substantial (Significant)
	Very High	Not Significant	Moderate (Significant) or Major (Significant)	Major (Significant) or Substantial (Significant)	Substantial (Significant)

## 6.11 Impact assessment

### 6.11.1 Construction

6.11.1.1 The impacts of the onshore construction of Hornsea Four have been assessed on land use and agriculture. The environmental impacts are listed in [Table 6.13](#) along with the maximum design scenario against which each construction phase impact has been assessed.

6.11.1.2 A description of the potential effect on land use and agriculture caused by each identified impact is given below.

#### **Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)**

##### Magnitude of impact

6.11.1.3 Direct (physical) impacts could result from the land take associated with construction works within the entire onshore footprint area, including construction of permanent infrastructure, temporary access tracks/haul roads, temporary logistical compound areas and temporary storage areas due to:

- Removal and storage of top soil and subsoil (trench excavation);
- Open-cut excavation of the cable trench;
- Excavation of joint bays and installation of permanent link boxes;
- Works areas (ECC and logistical compounds); and
- Temporary access tracks (haul roads).

6.11.1.4 A maximum area of 4 ha at the landfall over a maximum 32 month construction period will be disturbed. Such land includes "best and most versatile land" Grades 2 and 3a which would be temporarily lost or restricted for agricultural practice.

6.11.1.5 Similarly, land take along the onshore ECC route (over a maximum area of 320 ha) will include "best and most versatile land" Grades 2 and 3a and will also be restricted for agriculture during the construction period (a maximum period of 36 months). Additionally, up to 24 temporary access roads of up to 6m wide (7m for passing places) will also be provided.

6.11.1.6 Restricted access to the land along the onshore ECC could impact associated users due to:

- Fields boundaries removed or altered;
- Severance of fields;
- Removal of vegetation and crops;
- Land access altered; and
- Agricultural drainage pathways altered.

6.11.1.7 Land take at the OnSS will comprise of a 13 ha temporary works area plus the 15.5 ha affected permanently. Additional land will be required for the 400kV cables to connect to Creyke Beck substation. The land here is Grade 2 and thus conforms to the definition of "best and most versatile land". Restrictions to farming during construction of up to 36 months will be required in these areas during construction.

6.11.1.8 More than 50 ha of the "best and most versatile land" is predicted to be unavailable at some point during construction across the landfall, onshore ECC and the OnSS, with potential disruption to cultivation patterns occurring. However, disruption effects to the majority of the agricultural land affected will be associated with the long, linear ECC. As the effect will be felt over the approximate 40km linear ECC route effects will not be concentrated in any one farm holding area avoiding causing large scale disruption to farming practices and cultivation to any single landholding. Development of a CoCP (Co124) to minimise disruption to land users (including farmers) will be implemented to assist farmers in accessing and cultivating land outside of the direct ECC footprint as far as possible.

6.11.1.9 Given the temporary nature of the construction phase, the embedded mitigation and the linear nature of the ECC (along which most of the effects will be felt), the effect of disrupting farming practices and reduction in land available for farming activities is identified as being of **minor** magnitude.

## Sensitivity of the receptor

- 6.11.1.10 The sensitivity of the receptor is considered to be **very high** given almost the entire extent of land take is “best and most versatile” arable land (noting that it is assumed that all Grade 3 land is 3a not 3b).

## Significance of the effect

- 6.11.1.11 During the construction period all areas of land that fall within the onshore project footprint may be affected, with agricultural land use temporarily changed. Additionally, the works may sever or impede access to parcels of land and effect agricultural practice in close proximity to such works areas. Where practical, such areas have been minimised through the onshore ECC route planning process, with the onshore ECC aligned with field boundaries where possible ([Volume 1, Chapter 3: Site Selection and Consideration of Alternatives](#)).
- 6.11.1.12 Following construction Hornsea Four has committed to reinstating land to pre-existing conditions as far as reasonably practical (Co10) and reducing compaction effects through limiting stockpiling of soils to 2 m high (Co8). Minor changes to soils may occur on areas utilised for construction but this is not predicted to change subsequent agricultural land use. Whilst it is considered there will be a direct effect on soils, it would be localised and reversible. Given the temporary nature of the impact, and commitment to restore land to pre-existing use wherever possible, it is considered that land will return back to its previous agricultural usage and that any farming practices will be able to resume following construction. Exceptions to this will be in small areas above link boxes where manholes may be present and joint bays.
- 6.11.1.13 Changes to cultivation practices will occur during the construction phase but a CoCP (Co124) will reduce effects on farming to ensure that disruption is minimised to working practices and that cultivation can take place outside of the project’s direct footprint. The footprint of the ECC will temporarily reduce access across a 40 km route but as this is a linear feature disruption to any single landholding is not predicted to be of greater than a minor nature given the embedded mitigation to assist farmers (and other land users) in accessing land whilst construction takes place.
- 6.11.1.14 Whilst the overall land use is considered to be highly sensitive to change and when assessed against the methodology presented in [Table 6.16](#) without the context provided above, the effect would be moderate adverse. However, it is important to account for the highly localised, linear (avoiding concentrated impacts on individual land users) and temporary nature of the impact. It is considered that changes to the “best and most versatile” agricultural land will be of **minor adverse** significance, which is not significant in EIA terms.

## Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths. (LUA-C-2)

### Magnitude of impact

- 6.11.1.15 Installation of the onshore cables at landfall will temporarily affect recreational users accessing Ulrome Sands for up to six months spread across the 32 month construction period (maximum). Wherever possible access will be maintained across the beach and public diversions established, however should open cut works be necessary, certain activities such as cable pulling or excavations would require that parts of the beach or intertidal area are closed off to the public temporarily.
- 6.11.1.16 The beach on this part of the east Yorkshire coastline runs continuously from Bridlington (in the north), past Hornsea and Withernsea, to Spurn Head (in the south) over a distance of approximately 64km. Locally, access to the beach from Barmston (to the south of the landfall area) and Wilsthorpe (to the north) will be unaffected. Informal beach usage e.g. for walking (including dog walking) and fishing, will not be constrained to any significant degree with ample recreational space available for such activities locally and within the wider area. There will be the temporary diversion of one footpath accessing the beach (BARMFO4) and therefore a localised change in access to Ulrome Sands where connection works will be undertaken.
- 6.11.1.17 No information of the English Coast Path in this area is available and as this local part of the national path is yet to be identified in this area no effects are identified at this time. However, assuming such a national trail is in place by the commencement of construction and it runs parallel with the coast and in close proximity to it, temporary closure and diversion will be required.
- 6.11.1.18 Hornsea Four has committed to providing diversions where at all possible in relation to all PRoW that will be affected by construction with appropriate signage. Subsequently all PRoW will be reinstated as soon as reasonably practical (Co79).
- 6.11.1.19 Given there will be a temporary (six months spread within the 32 months construction period, as per Co165) restriction in one access point to Ulrome Sands and the English Coast Path (if designated in time), with the likely temporary closure of footpath BARMFO4 with provision of embedded mitigation, and in consideration of continued beach access from nearby villages and the wide recreational resource of the beaches in the area the magnitude of the effect is considered to be **minor**.

### Sensitivity of the receptor

- 6.11.1.20 The sensitivity of the receptor is considered **medium** given the large expanse of the beach on this part of the coast, a possible National Trail in place by the time construction commences with potential for a temporary substitute route to be agreed, the level of access

granted by PRow for informal recreation to Ulrome Sands and the importance of coastal access to local residents and beach users.

### Significance of the effect

6.11.1.21 Given the location of the landfall compound area and cable installation works it is unavoidable that beach access will be temporarily restricted, and any coastal path affected. It is anticipated that local users will be diverted and able to access the beach front through one of the available PRow (BARMF05 and ULROF06) and diversions applied to any coastal path with (Co79) ensuring effects are minimised appropriately.

6.11.1.22 Given the minor magnitude of the predicted effect, and the medium receptor sensitivity the effect is **minor adverse** significance which is not significant in EIA terms.

### **Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements) (LUA-C-3)**

6.11.1.23 In addition to the direct impacts on land use and agriculture, there is the potential impact for construction activities to cause disturbance and nuisance to recreational resources and users within or near the construction footprint(s). Such effects are predominantly related to noise and vibration (**Chapter 8: Noise and Vibration**), dust and air quality (**Chapter 9: Air Quality and Health**), and traffic access (**Chapter 7: Traffic and Transport**). The reader is directed to these chapters in the PEIR where an appropriate level of assessment is provided. Inter-related effects on recreational resources and amenity is also covered in **Section 6.14**.

### **Impacts of construction may affect National Cycle Network Routes, other PRow and promoted routes, resulting in severance, temporary diversion or closure. (LUA-C-4)**

### Magnitude of impact

6.11.1.24 **Table 6.10** identifies 19 footpaths, seven bridleways and two cycle paths that will be crossed by Hornsea Four onshore infrastructure (shown on **Figure 6.4** to **Figure 6.8**).

6.11.1.25 The routes affected are located throughout the onshore Hornsea Four area and the majority of the routes will require closure and diversion of up to six months spread over the course of the maximum 30 month construction period (Co165) as they are associated with the cable installation which will be highly transitory at any one location. Further details related to specific PRow will be developed for the DCO application.

6.11.1.26 Longer term effects will occur in relation to those routes affected by the OnSS and also those affected by the landfall (with this latter category previously assessed above). At

the OnSS a small network of routes will be affected for up to 36 months whilst construction takes place. This will include impacts on National Cycle Route 1.

- 6.11.1.27 Impacts on the routes affected will be highly transitory along the ECC. Longer term (but still temporary) effects will arise in relation to construction of the OnSS affecting a number of routes for up to 36 months. The magnitude of impact is considered to be **minor** (and not significant in EIA terms) at all locations due to the embedded mitigation to create and signpost diversions for all closures ensuring routes exist for public usage throughout the construction phase.

Sensitivity of the receptor

- 6.11.1.28 A very short section of a national route will be affected (National Cycle Route 1) and this receptor is identified as being of **high** sensitivity, with the remaining PRow being of more local importance the sensitivity of the receptor is considered to be **medium**.

Significance of the effect

- 6.11.1.29 Diversion routes (and associated signage) installed under commitment Co79 will be available during construction and whilst some impacts to PRow will occur these will be temporary. The embedded mitigation will ensure that alternative and signed routing for PRow users will take place and incorporation of this mitigation will assist in reducing any adverse impacts on severance. The significance of effect is therefore considered to be **minor adverse** (notably due to incorporation of Co79) for all receptors and therefore not significant in EIA terms.

Future monitoring

- 6.11.1.30 Given the lack of potential significant effects no monitoring in relation to land use and agriculture is proposed as part of Hornsea Four.

## 6.11.2 Operation and Maintenance

**Impacts of construction or operation may affect National Cycle Network Routes, other PRow and promoted routes, resulting in severance, temporary diversion or closure. (LUA-O-5)**

Magnitude of impact

- 6.11.2.1 During the operational and maintenance phase the onshore project infrastructure relating to the cable and landfall will be buried with no effects on PRow forecast in these two areas. The OnSS will permanently impact one PRow, namely Skidby No 16 footpath (SKID16 on **Figure 6.8**) which runs through the area identified for the permanent OnSS.

- 6.11.2.2 This footpath runs eastward from the Woodhill Way Travellers Site, through Cottingham Park Golf and Leisure Club, connecting with SKID17 (which runs down Park Lane in to the

north of Cottingham) connecting to the north with WOODFO7 which runs up to Poplar Farm, just to the north of the OnSS. There is a relatively dense PRow network in this area and other routes moving east-west and north-south are available in the local vicinity.

6.11.2.3 As part of Commitment Co79, Hornsea Four have identified that, "Where permanent severance to PRow is necessary, permanent diversions of such routes will be applied." Given the good local PRow network it is considered that a permanent diversion will be possible either using one of the other local paths or a completely new path (outside of the current PEIR redline boundary) subject to further investigation, agreement with ERYC, local consultation and landowner agreement. Considering the above and the isolated nature of a single potential diversion that will be required where a wider PRow network is available, and a commitment made to mitigate through permanent diversion, the magnitude of impact is considered to be **minor**.

Sensitivity of the receptor

6.11.2.4 SKID16 is considered to be a PRow of local importance as is not designated as a national or regional walking and/or cycling route. The sensitivity of the receptor is considered to be **medium**.

Significance of the effect

6.11.2.5 The embedded (tertiary) mitigation will ensure that an alternative and signed diversion for PRow users will be put in place for the single PRow permanently affected. The significance of effect is considered to be **minor adverse** (notably due incorporation of Co79) and therefore not significant in EIA terms.

Future monitoring

6.11.2.6 No future monitoring is proposed once a permanent diversion is in place to SKID16.

### 6.11.3 Decommissioning

**Impacts of decommissioning above ground installations may temporarily affect agricultural land and farm holdings, resulting in temporary disruption or reduction in land available for farming activities.**

6.11.3.1 An assessment of the potential impacts of the decommissioning above ground installations on agricultural land and farm holdings within the OnSS have been scoped out by Hornsea Four ([Section 6.8](#)) through commitment Co127. This commitment ensures that a decommissioning plan will be developed to remove all onshore above ground infrastructure and the decommissioning of below ground infrastructure. It is therefore considered the impacts associated with the decommissioning phase will be of equal or lower magnitude to those identified for the construction phase (noting that no significant effects have been identified in relation to the construction phase).

6.11.3.2 Together with the Onshore Decommissioning Plan, it is expected that the detail and scope of the decommissioning works will be determined by the relevant rules and regulations, as well as industry best practises at the time of decommissioning. However, as a precautionary measure, to minimise the environmental disturbance during decommissioning, onshore export cables will be left in situ underground with the cable ends cut, sealed and securely buried. The external structures of the joint bays and link boxes along the corridor will be removed only if it is feasible with minimal environmental disturbance. Any land disturbed by such works will be relatively minor in extent and reinstatement will take place in line with any decommissioning plan and regulatory requirements.

6.11.3.3 In relation to the OnSS site, measures will be required to manage associated environmental effects of removal of all infrastructure and associated wastes, breaking up of foundations and land reinstatement. The waste hierarchy will form a key component of any such work ensuring the process is as sustainable as possible with specific details captured in the associated Onshore Decommissioning Plan.

## 6.12 Cumulative effect assessment (CEA)

6.12.1.1 Cumulative effects can be defined as effects upon a single receptor from Hornsea Four when considered alongside other proposed and reasonably foreseeable projects and developments. This includes all projects that result in a comparative effect that is not intrinsically considered as part of the existing environment.

6.12.1.2 The overarching method followed in identifying and assessing potential cumulative effects in relation to the onshore environment is set out in [Volume 4, Annex 5.5: Onshore Cumulative Effects](#). The approach is based upon the Planning Inspectorate (PINS) Advice Note 17: Cumulative Effects Assessment (PINS, 2017). The approach to the CEA is intended to be specific to Hornsea Four and takes account of the available knowledge of the environment and other activities around the PEIR boundary.

6.12.1.3 The CEA has followed a four stage approach developed from Advice Note 17. Each of the four stages is identified in [Table 6.17](#) along with commentary specifically relating to land use and agriculture.

**Table 6.17: Stages and activities involved in the CEA process**

CEA stage	Activity
<p>Stage 1 – Establish the project’s Zone of influence (Zoi) and establish a long-list of developments</p>	<p>Through consultation it has been identified that potential developments that need considering as part of the onshore CEA are restricted to those within the ERYC area. To determine a ‘long-list’ of possible projects for inclusion in the CEA the following actions have been carried out:</p> <ul style="list-style-type: none"> <li>• Interrogation of the ERYC planning portal (latest review is May 2019); and</li> <li>• Discussion of potential projects for specific inclusion in the CEA at the Evidence Plan meetings.</li> </ul> <p>To date these processes have identified 17 projects which form the ‘long-list’. In order to attribute an element of certainty to the assessment each project has been assigned a Tier reflecting their current status within the planning and development process.</p> <p>The full list of projects and relevant tiers assigned can be found in Appendix A of <a href="#">Volume 4, Annex 5.5: Onshore Cumulative Effects</a>. The location of projects is shown in <a href="#">Volume 4, Annex 5.6: Location of Onshore Cumulative Schemes</a>.</p>
<p>Stage 2 – Screening of long list: Identify a shortlist of other developments for the CEA</p>	<p>Effects on land use and agriculture assessed in this chapter mainly relate to direct effects. Some effects such as disturbance to land use may have a slightly wider potential to spatially affect receptors and a 1 km buffer has been applied to the Hornsea Four boundary within which cumulative effects are assessed.</p>
<p>Stage 3 – Information gathering</p>	<p>Where available information on the other developments within the shortlist generated at Stage 2 has been collated to inform the CEA. At this stage (PEIR) information is of high level unless explicitly discussed with ERYC. The information collected on each project is presented in <a href="#">Volume 4, Annex 5.5: Onshore Cumulative Effects</a> with the location shown in <a href="#">Volume 4, Annex 5.6: Location of Onshore Cumulative Schemes</a>.</p>
<p>Stage 4 - Assessment</p>	<p>The CEA has been undertaken in two stages:</p> <ol style="list-style-type: none"> <li>i) Each of the potential effects that are subject to assessment alone have been reviewed against the potential for cumulative effects to occur.</li> <li>ii) A CEA assessment of each of the other developments on the short-list has taken place for those effects where it is considered that potential cumulative impacts could occur.</li> </ol> <p>The assessment also includes, where relevant, consideration of any mitigation measures where adverse cumulative effects are identified and signposts to the relevant means of securing mitigation.</p>

## 6.12.2 CEA Stage 2 Shortlist and Stage 3 Information Gathering

6.12.2.1 A short list of projects for CEA has been produced using the 1 km screening buffer set out in [Table 6.17](#) and scoping out other projects where cumulative effects are unlikely (e.g. due to lack of a pathway for such an effect or where no temporal effect is possible). The results of the screening are provided in [Appendix A of Volume 4, Annex 5.5: Onshore Cumulative Effects](#) and [Annex 5.6: Location of Onshore Cumulative Schemes](#). Summary information on the projects progressing through this exercise (i.e. the short-list of other projects) for assessment is provided below.

6.12.2.2 Eight projects have been identified for inclusion on the short-list of projects to be assessed cumulatively. The remaining projects have not been considered as resulting in likely cumulative significant effects as they located in excess of 1 km from the Hornsea Four boundary. The eight projects can be summarised as:

- Two wind farm related substation and associated cabling projects; and
- A number of business and industrial projects located within 1 km of the OnSS including: power generation; energy storage; onshore components of other offshore wind farm projects; and agricultural related development.

## 6.12.3 CEA Stage 3 Assessment

6.12.3.1 As stated in the previous table the assessment is undertaken in two stages:

- [Table 6.18](#) sets out the potential impacts assessed in this chapter and identifies the potential for cumulative effects to arise, providing a rationale for such determinations; and
- [Table 6.19](#) sets out the CEA for each of the projects/developments that have been identified on the short-list of projects screened.

6.12.3.2 It should be noted that stage 2 is only undertaken if stage 1 identifies that cumulative effects are possible.

**Table 6.18: Potential Cumulative Effects.**

Impact	Potential for Cumulative Effect?	Rationale
<i>Construction</i>		
1 Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities.	Yes	Cumulative disruption or reduction in landholdings could occur if other developments which change agricultural land use take place concomitantly with the construction phase of Hornsea Four.

Impact	Potential for Cumulative Effect?	Rationale
2 Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths.	Yes	Any other projects that disrupt access to the beach or its wider usage may have additive, cumulative effects.
3 Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements)	Yes	Impacts to recreational resources or areas of amenity may be exacerbated by other projects.
4 Impacts of construction may affect National Cycle Network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure.	Yes	Other projects affecting National Cycle Network Routes or other PRoW could result in cumulative effects.
<i>Operation</i>		
5 Impacts of operation may affect National Cycle Network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure.	Yes	Other projects affecting National Cycle Network Routes or other PRoW could result in cumulative effects.

*Decommissioning*

The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative impacts during the decommissioning stage are assumed to be the same as those identified during the construction stage. Additionally, PINS have stated in their Scoping Opinion that cumulative decommissioning effects are scoped out of the EIA.

6.12.3.3 The second stage of the CEA is a project specific assessment of the potential for any significant cumulative effects to arise due to the construction and/or operation and maintenance of Hornsea Four. To identify whether this may occur each shortlisted project is discussed in [Table 6.19](#).

6.12.3.4 Eight projects have been assessed for cumulative effects in relation to land use and agriculture. No significant cumulative effects have been identified in relation to any of these other projects and it is also considered that the total cumulative effect from all projects will not result in any effect of any greater significance than assessed in isolation.

**Table 6.19: Project screening for land use and agriculture CEA.**

Project	Description	Location Description (relative to Hornsea Four Boundary)	Discussion	Likelihood and Significance of Cumulative Effects
Elm Tree Farm Substation and Access Track	Erection of a substation building and construction of an access track in connection with approved wind turbine	Substation is located adjacent to Hornsea Four boundary. Construction access tracks due to extend west and north outside of the Hornsea Four boundary.	<p>No temporal overlap in construction activities removes any potential for concomitant construction phase impacts.</p> <p>Land use change from this development is insignificant with respect to the agricultural resource available. Potential effects on agriculture is therefore considered insignificant.</p> <p>No potential effects on any PRoW affected by Hornsea Four have been identified.</p>	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the small scale of this development, its operational status when Hornsea Four is being built, and its location distant from the direct onshore project footprint.
Bridge House Wind Farm Associated Facilities	Erection of a substation building and underground electricity cable in association with previously approved wind turbine	Located north-west of cable centreline, outside of the Hornsea Four boundary. Associated infrastructure including electricity cable will travel within the Hornsea Four boundary.	<p>No temporal overlap in construction activities removes any potential for concomitant construction phase impacts.</p> <p>Land use change from this development is insignificant with respect to the wider landscape and agricultural resource available. Potential effects on agriculture is therefore considered insignificant.</p>	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the small scale of this development, and its operational status when Hornsea Four is being built.

Project	Description	Location Description (relative to Hornsea Four Boundary)	Discussion	Likelihood and Significance of Cumulative Effects
			No potential effects on any PRoW affected by Hornsea Four have been identified.	
Teckno Developments Site	Erection of a building for Business (B1), General Industry (B2) and Storage/Distribution (B8) uses and erection of boundary fence	Located approximately 210 m west of the Hornsea Four boundary, south of the A1035.	This development will not significantly reduce or affect agricultural land availability or working practices and will not impact any ProW.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, its operational status when Hornsea Four is being built, and its location outside the direct onshore project footprint.
Lawns Farm Park Battery Storage	Construction of a 49.5MW Battery Storage Facility (17 battery units) with associated infrastructure and landscaping	Works are located east of OnSS within the Hornsea Four boundary.	This site will be operational when Hornsea Four is being constructed and no effects on agricultural land or PRoW are predicted.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development, its operational status when Hornsea Four is being built, and its location distant from the direct onshore project footprint.
Jocks Lodge Highway Scheme	EIA Screening Opinion - A164 and Jocks Lodge Highway Improvement Scheme	Works occurring on the A1079. 700m northwest of Hornsea Four boundary access track.	Although construction of this scheme will overlap with the construction of Hornsea Four in 2024, only minor effects on agricultural land with no effect on any PRoW affected by Hornsea Four will occur.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the nature of this development and its location away from the direct Hornsea Four project footprint.

Project	Description	Location Description (relative to Hornsea Four Boundary)	Discussion	Likelihood and Significance of Cumulative Effects
Dogger Bank - Creyke Beck A	The consent application submitted allows for up to 400 wind turbines in total, therefore currently being split across the two phases. Project Capacity 1,000-1,200MW.	Windfarm located 131km offshore. The converter station would be north of the A1709 between Beverley and Cottingham in the East	Construction for Creyke Beck A and B is proposed to take place in 2020-2022. Construction of these projects will affect National Cycle Route 1 and a number of PRoW to the north of the OnSS and near Ulrome Sands where temporary diversions will be required during works to cross these features by the export cable.	Cumulative effects are not predicted due to the differing construction phases of these projects and Hornsea Four. Operational effects are not predicted in relation to PRoW and long term loss of agricultural land is minor.
Dogger Bank - Creyke Beck B	The consent application submitted allows for up to 400 wind turbines in total, therefore currently being split across the two phases. Project Capacity 1,000-1,200MW.	Windfarm located 131km offshore. The converter station would be north of the A1709 between Beverley and Cottingham in the East	Minor, and temporary loss, of agricultural land will take place near Ulrome Sands during construction.  There is no overlap in construction with Hornsea Four and no significant operational changes to land use/agriculture or PRoW are predicted from Creyke Beck.	No significant cumulative effects are predicted.
Low Farm Dunswell Lane Dunswell	Erection of glasshouses, automated bedding units and wind breaks to outdoor planting beds, external and internal alterations to redundant agricultural buildings to	1.1km east of the Hornsea Four boundary.	No PRoW directly impacted by Hornsea Four will be affected and any changes to land use are minor and at distance from the Hornsea Four project boundary.	No likely significant cumulative effects are predicted in relation to any construction or operational phase effects on land use, agriculture or recreation (including use of PRoW) due to the scale of this development,

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Project	Description	Location Description (relative to Hornsea Four Boundary)	Discussion	Likelihood and Significance of Cumulative Effects
	allow conversion to offices and stores, relocation of workers caravans, construction of reservoir with installation of drainage infrastructure across the site and creation of access to low farm, 5 passing places along Long Lane and junction improvements onto the A1174 (Hull Road)			and its location 800m outside of the direct onshore project footprint.

## 6.13 Transboundary effects

6.13.1.1 A screening of transboundary impacts is presented in Appendix K of the Scoping Report (Ørsted, 2018) and this work identified that there is no potential for significant transboundary effects regarding land use and agriculture from Hornsea Four on the interests of other EEA States.

6.13.1.2 Any impacts on land use, agriculture and recreation arising from the construction, operation and maintenance and decommissioning of Hornsea Four will be confined to a localised area within the footprint of the Hornsea Four onshore ECC. There is no pathway by which direct or indirect effects arising from Hornsea Four could significantly affect the land use, agriculture and recreation of another member state.

## 6.14 Inter-related effects

6.14.1.1 Inter-related effects consider impacts from the construction, operation or decommissioning of Hornsea Four on the same receptor (or group of receptors). The potential inter-related effects that could arise in relation to land use and agriculture are presented in [Table 6.20](#). Such inter-related effects include both:

- Project lifetime effects: i.e. those arising throughout more than one phase of the project (construction, operation, and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation;
- Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

6.14.1.2 A description of the process to identify and assess these effects is presented in [Section 2 of Volume 1, Chapter 5: EIA Methodology](#).

**Table 6.20: Inter-relationships with Land Use and Agriculture**

Project phase(s)	Nature of inter-related effect	Assessment alone	Inter-related effects assessment
<i>Project-lifetime effects</i>			
Construction and Operation	Impacts of construction may affect National Cycle network Routes, other PProW and promoted routes, resulting in severance, diversion or closure.	<b>Minor adverse</b>	Although 28 PProW will be temporarily affected during construction only one PProW will be impacted during operation (SKID16) – a footpath used on a local level. Considering the single PProW affected over both construction and operational phases and the commitment to provide permanent diversion of this route (Co79) the assessment of this project lifetime effects is assessed as being the same as the effect in relation to the operational phase, i.e. <b>minor adverse</b> (and not significant in EIA terms).
<i>Receptor-led effects</i>			
Construction	Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities.	<b>Minor Adverse</b>	<p>Cumulative effects on agricultural land and disruption to farming activities may result from effects on water resources, traffic and contaminated land/soils.</p> <p><b>Chapter 7: Traffic and Transport</b> does not identify any significant effects in respect of delay or severance, which would affect farming activities following the incorporation of mitigation.</p> <p>Disruption to land drainage was scoped out of the assessment presented in <b>Chapter 2 Hydrology and Flood Risk</b>, with provision for a drainage strategy (see <b>Volume F2, Chapter 6: Outline Onshore Infrastructure Drainage Strategy</b>) to be compiled to ensure works associated with cable installation won't affect the integrity of local land drainage systems.</p> <p>The issue of encountering contamination during site works (which could lead to impacts on neighbouring farming practices and land use) has been assessed in <b>Chapter 1: Geology and Ground Conditions</b> as minor adverse significance with a commitment to develop a contaminated land and groundwater scheme to identify contamination and any remedial measures in advance of site work (Co77).</p>

Project phase(s)	Nature of inter-related effect	Assessment alone	Inter-related effects assessment
			<p>Considering all of the above no additional inter-related effects are predicted which would increase the stand alone assessment from <b>minor adverse</b> (and not significant in EIA terms).</p>
Construction	Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths.	<b>Minor Adverse</b>	<p>Recreational use of the coast may also be affected by noise and vibration, with traffic impacts potentially causing access issues that could result in inter-related effects.</p> <p><b>Chapter 8: Noise and Vibration</b> predicts a negligible magnitude of noise effects at receptors near the beach. Noise is therefore not predicted to cause additional inter-related effects above the stand alone assessment.</p> <p><b>Chapter 7: Traffic and Transport</b> does not identify any significant effects on road links near the coast including the A165 which provides the main access to this part of the coast from further afield.</p> <p>Considering all of the above no additional inter-related effects are predicted which would increase the stand alone assessment from <b>minor adverse</b> (and not significant in EIA terms).</p>
Construction	Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements)		<p>Refer to other technical chapters for further information (<b>Chapter 8: Noise and Vibration</b>), dust and air quality (<b>Chapter 9: Air Quality and Health</b>), and traffic (<b>Chapter 7: Traffic and Transport</b>).</p>
Construction	Impacts of construction may affect National Cycle network Routes, other PRoW and promoted routes, resulting in severance, temporary diversion or closure.	<b>Minor Adverse</b>	<p>Traffic and transport has the potential to cause severance, temporary diversion or closure of PRoW where such features are connected to the road network (e.g. footpath SKID17 extends from Park Lane north of Cottingham (road link 89)).</p> <p>The traffic and transport assessment set out in <b>Chapter 7: Traffic and Transport</b> includes an assessment of pedestrian amenity on road links. Once additional mitigation is applied the significance of impacts on pedestrian amenity is</p>

Project phase(s)	Nature of inter-related effect	Assessment alone	Inter-related effects assessment
			<p>considered to be minor adverse at worst on all links including those adjoining or in proximity to the PRoW network.</p> <p>Given this level of effect and also the minor adverse standalone effect on PRoW no inter-related effects are therefore predicted which would increase the stand alone assessment from <b>minor adverse</b> (and not significant in EIA terms).</p>
Operation	Impacts of construction may affect National Cycle network Routes, other PRoW and promoted routes, resulting in severance, diversion or closure.	<b>Minor adverse</b>	Traffic and transport has the potential to cause severance, temporary diversion or closure of PRoW. However, such operational phase traffic and transport effects have been scoped out because no likely significant effects have been identified. No inter-related effects are therefore predicted which would increase the stand alone assessment from <b>minor adverse</b> (and not significant in EIA terms).

6.14.1.3 The inter-related effects assessment for land use and agriculture has not identified any other aspect of the impact assessments which may act additively with those set out in this chapter, and no effects greater than **minor adverse** are predicted, which is not significant in EIA terms.

## 6.15 Conclusion and summary

6.15.1.1 This chapter of the PEIR has assessed the potential impact from the onshore development of Hornsea Four on land use and agriculture.

6.15.1.2 **Table 6.21** presents a summary of the impacts assessed within this PEIR, the associated mitigation and the residual effects.

6.15.1.3 Construction phase impacts relating to (i) disruption to or loss of agricultural land, (ii) temporary disruption to coastal access and (iii) impacts on cycle routes and PRoW have been assessed. Residual impacts for all three impacts are assessed as **minor adverse** given the temporary nature of the effect and the sensitivity of the receptors to such temporary changes once mitigation commitments have been taken account of. It should be noted that

potential effects from noise and vibration, air quality, and traffic and transport on recreational and amenity are presented in these respective technical chapters of the PEIR.

- 6.15.1.4 The operation of Hornsea Four will permanently affect a single footpath at the OnSS site. A commitment to provide a permanent diversion and the relatively dense network of alternative paths in the vicinity of the OnSS reduces effects to a **minor adverse** level.
- 6.15.1.5 The construction phase of Hornsea Four presents the highest potential for significant environmental effects. Impacts during decommissioning would result in an effect of equal significance, at worst. Further details will be provided and secured within a Decommissioning Plan, agreed with stakeholders prior to decommissioning commencing.
- 6.15.1.6 No cumulative or inter-related effects have been identified which increase the significance of any standalone assessment set out in this chapter.
- 6.15.1.7 In summary, **no impacts** have been identified which are considered significant in EIA terms on land use and agricultural resources.

**Table 6.21: Summary of potential impacts assessed for land use and agriculture**

Impact and Phase	Receptor and value/sensitivity	Magnitude and significance	Mitigation	Residual impact
<i>Construction</i>				
Impacts of construction on agricultural land and farm holdings resulting in temporary disruption or reduction in land available for farming activities. (LUA-C-1)	Very High (due to presence of 'best and most versatile' agricultural land)	Minor (due to the temporary nature of the effect, the linear nature of the ECC avoiding concentrated disruption to any single farm holding and embedded mitigation)	None proposed beyond existing Commitment (Co63, Co68, Co8, Co10, Co19, Co124)	Minor adverse, which is not considered to be significant in EIA terms.
Impacts of construction may affect recreational use of the coast through temporary disruption to beach access and coastal paths. (LUA-C-2)	Medium (given the access afforded locally, size of the regional beach resource and potential coastal path)	Minor (due to embedded mitigation, few access points affected and considering the potential for a coast path).	None proposed beyond existing Commitment (Co79, Co124, Co158, Co165)	Minor adverse, which is not considered to be significant in EIA terms.
Impacts of construction may affect recreational resources and amenity (noise, dust, and traffic movements). (LUA-C-3)			None proposed beyond existing Commitment (Co133, Co134, Co114, Co123, Co124)	Refer to other technical chapters for further information ( <b>Chapter 8: Noise and Vibration</b> ), dust and air quality ( <b>Chapter 9: Air Quality and Health</b> ), and traffic access ( <b>Chapter 7: Traffic and Transport</b> ).
Impacts of construction may affect National Cycle network Routes, other PRow and promoted routes, resulting in severance, temporary diversion or closure. (LUA-C-4)	High to Medium (given one National Cycle Route Affected plus PRow)	Moderate (due to embedded mitigation to divert and sign appropriately over a temporary period)	None proposed beyond existing Commitments (Co79, Co124, Co158, Co165)	Minor adverse, which is not considered to be significant in EIA terms.

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Impact and Phase	Receptor and value/sensitivity	Magnitude and significance	Mitigation	Residual impact
<i>Operation</i>				
Impacts of construction may affect National Cycle network Routes, other PRow and promoted routes, resulting in severance, diversion or closure. (LUA-O-5)	Medium (given impact on single receptor of local importance)	Minor (given the relatively dense PRow network in the vicinity of the OnSS and commitment to provide permanent diversion to the single affected PRow)	None proposed beyond existing Commitments (Co79)	Minor adverse, which is not considered to be significant in EIA terms.

## 6.16 References

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