Hornsea Project Four

Outline Code of Construction Practice

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D	Outline Pollution Prevention Plan
E	Outline Site Waste Management Plan
F	Outline Construction Traffic Management Plan

Glossary

Term	Definition
Commitment	A term used interchangeably with mitigation and enhancement measures. The purpose of Commitments is to reduce and/or eliminate Likely Significant Effects (LSEs), in EIA terms. Primary (Design) or Tertiary (Inherent) are both embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, Preliminary Environmental Information Report (PEIR) or ES). Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment i.e. so that residual effects are acceptable
Connection Works	Work Nos. 6 to 10 and any related further associated development in connection with those works.
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.
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 (ES).
Environmental Statement (ES)	A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.
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.
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

Term	Definition
	working area and landfall compound. Where the offshore cables come ashore east of Fraisthorpe.
National Grid Electricity Transmission (NGET) substation	The grid connection location for Hornsea Four at Creyke Beck.
Onshore substation (OnSS)	Comprises a compound containing the electrical components for transforming the power supplied from Hornsea Project Four to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid. If a HVDC system is used the OnSS will also house equipment to convert the power from HVDC to HVAC.
Order Limits	The limits within which Hornsea Project Four (the 'authorised project') may be carried out.
Orsted Hornsea Project Four Ltd.	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).
Principal Contractor	The Principal Contractor(s) leads the construction phase of Hornsea Four, managing sub-contractors. As defined by the Construction (Design and Management) Regulations 2019.
Trenchless Techniques	Also referred to as trenchless crossing techniques or trenchless methods. These techniques include Horizontal Directional Drilling (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
ALO	Agricultural Liaison Officer
BS	British Standard
CCS	Considerate Contractors' Scheme
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CIRIA	Construction Industry Research and Information Association,
CoW	Clerk of Works
CTMP	Construction Traffic Management Plan
CTMPco	Construction Traffic Management Plan Coordinator
DCO	Development Consent Order
EBI	Energy Balancing Infrastructure
ECC	Export cable corridor
EcOW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ERYC	East Riding of Yorkshire Council
HDD	Horizontal Directional Drill
HGV	Heavy Goods Vehicle
IDB	Internal Drainage Board
JNCC	Joint Nature Conservation Committee
LLFA	Lead Local Flood Authority
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
NGET	National Grid Electricity Transmission
OnSS	Onshore Substation
PEIR	Preliminary Environmental Information Report
PRoW	Public Right of Way
QHSE	Quality, Health, Safety and Environment
SNCB	Statutory Nature Conservation Body

1 Introduction

1.1 General

1.1.1.1 Orsted Hornsea Project Four Limited (the 'Applicant') is proposing to develop the Hornsea Project Four Offshore Wind Farm (hereafter 'Hornsea Four'). Hornsea Four will be located approximately 69 km offshore the East Riding of Yorkshire in the southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall, and on to an onshore substation (OnSS) with energy balancing infrastructure (EBI), and connection to the electricity transmission network.

1.1.1.2 Details of the activities and infrastructure associated with Hornsea Four are fully set out in **Volume A1, Chapter 4: Project Description**. In summary, the onshore elements of Hornsea Four will comprise of:

- **Landfall** – including transition joint bays connecting the offshore export cable corridor (ECC) and onshore ECC, one temporary landfall compound and temporary access tracks;
- **Onshore ECC** – including the onshore export cables, eight temporary logistics compounds, joint bays and link boxes, and temporary access tracks;
- **OnSS and EBI** – including the temporary working area, temporary and permanent access tracks, the permanent working area (inclusive of the OnSS, EBI and associated landscaping and attenuation feature); and,
- **400 kV National Grid Electricity Transmission (NGET) connection area** – the area within which a 400 kV section of the onshore ECC will connect to the existing NGET substation at Creyke Beck.

1.2 Purpose

1.2.1.1 The outline Code of Construction Practice (CoCP) sets out the management measures that the Applicant and the appointed Principal Contractor(s) will be required to adopt and implement during the construction of the onshore and intertidal elements (up to Mean Low Water Spring (MLWS)) of Hornsea Four. In the event that Hornsea Four is granted development consent, a detailed CoCP(s) will be prepared and agreed with the relevant planning authority prior to construction of the relevant stage of the connection works, following the principles established in this outline CoCP. This is secured by Requirement 17 of the draft Development Consent Order (DCO) (**C1.1: Draft DCO including DML**) which states:

> ***17.***- *(1) No stage of the connection works may commence until a code of construction practice (which must accord with the outline code of construction practice) for that stage of the connection works has been submitted to and approved by the relevant planning authority, in consultation with the Environment Agency, the relevant SNCBs and, if applicable, the MMO.*

(2) All construction works must be undertaken in accordance with the relevant approved code of construction practice.

1.2.1.2 The term 'Construction' in this outline CoCP includes all onshore physical works undertaken to implement Hornsea Four, including demolition, waste disposal, but excluding site preparation works, as defined in the draft DCO (**C1.1: Draft DCO including DML**).

1.2.1.3 'Management measures' comprise legislative requirements, current standards and best practice, in addition to primary, tertiary and secondary commitments identified as part of the Hornsea Four Environmental Impact Assessment (EIA) Process (see **Section 4.1.2**). They include strategies, control measures and monitoring procedures for managing the potential impacts of constructing Hornsea Four and limiting disturbance from construction activities as far as reasonably practicable.

1.3 Structure

1.3.1.1 This outline CoCP follows the structure below:

- **Section 2** – Implementation of the outline CoCP;
- **Section 3** – Accompanying Plans to the CoCP;
- **Section 4** – General Principles;
- **Section 5** – General Site Operations;
- **Section 6** – Management of Onshore Environmental Issues; and
- **Section 7** – Management of Intertidal Environmental Issues.

2 Implementation of the CoCP

2.1 Outline and detailed CoCPs

2.1.1.1 The production of an outline CoCP fulfils Commitment 124 (Co124) (**Volume A4, Annex 5.2: Commitments Register**). Following the granting of consent for Hornsea Four, a detailed CoCP(s) will be prepared prior to commencement of the relevant stage of the connection works and will follow the principles established in the outline CoCP(s). The Applicant and all appointed contractors will be responsible for the implementation of the detailed CoCP(s).

2.1.1.2 All roles/responsibilities as set out in the detailed CoCP(s) will be fulfilled by the Principal Contractor, the Applicant and/or others. This shall be determined via contractual negotiations and the final responsibilities communicated to ERYC. Any responsibilities set out in this outline CoCP are therefore subject to change.

2.1.1.3 Hornsea Four will adopt a staged approach to the approval of DCO requirements enabling requirements to be approved in part or in whole prior to the commencement of the relevant stage of works according to whether a staged approach is to be taken to construction of the works in question. This approach will be governed by the inclusion of Requirement 27 within the draft DCO which requires a written scheme setting out the stages of construction to be approved prior to the commencement of the authorised development. The Construction Staging Scheme must be approved by the relevant planning authority in respect of the onshore connection works and by the MMO in relation to authorised works seaward of Mean High Water Spring (MHWS).

2.1.1.4 The Construction Staging Scheme will detail the stages of construction and the timing of approval of relevant DCO requirements with respect to the relevant construction stages identified within the scheme.

> ***27.*** *(1) The authorised development may not be commenced until a written scheme setting out the stages of construction of the authorised development has been submitted to and approved by the relevant planning authority, in relation to the connection works, or the MMO, in relation to works seaward of MHWS.*
>
> *(2) The stages of construction referred to in sub-paragraph (1) shall not permit the authorised development to be constructed in more than one overall phase.*
>
> *(3) The scheme must be implemented as approved*

2.2 Training and competence

2.2.1.1 The outline CoCP as certified by the Secretary of State will be incorporated into the contracts for the Principal Contractor(s) of all onshore and intertidal works authorised by the DCO. All Principal Contractor(s), subcontractors and their suppliers will be required to observe the relevant provisions of the CoCP and provide evidence on how they will ensure its requirements are implemented and monitored.

2.2.1.2 Compliance with this outline CoCP and the detailed CoCP(s) will not absolve the Principal Contactor(s) or subcontractors from the obligation of compliance with all legislation and byelaws relating to their construction activities.

2.2.1.3 All onshore and intertidal construction staff employed on Hornsea Four will receive training on their responsibilities for minimising the risk to the environment and implementing the measures set out in this outline CoCP and any subsequently approved detailed CoCP(s).

2.2.1.4 The Principal Contractor(s) will ensure that contractors employ an appropriately qualified and experienced workforce and will be responsible for identifying the training needs of their personnel. The training will include site briefings and toolbox talks as necessary to equip the workforce with the relevant knowledge on health, safety and environmental topics.

2.2.1.5 In addition to meeting the commitments in the outline CoCP, all Principal Contractor(s) will be required to sign up to, and implement, the Considerate Contractors' Scheme (CCS). The scheme is a voluntary Code of Considerate Practice which seeks to minimise disturbance caused by construction sites to the immediate neighbourhood and recognises the commitment to raise standards of site management.

2.2.1.6 The CCS Code of Considerate Practice is in five parts, each containing an aspirational supporting statement and four bullet points which represent the basic expectations of registration with the Scheme. These five parts will be applied during construction works and comprise:

- Care about Appearance;
- Respect the Community;
- Protect the Environment;
- Secure everyone's Safety; and
- Value their Workforce.

2.3 Roles and Responsibilities

2.3.1.1 Whilst the key roles for the construction project team will not be assigned until post-consent, the anticipated roles required to implement the outline CoCP are set out in **Table 1**. The responsibility for the appointment of various roles (whether by the Principal Contractor(s) or the Applicant) and the number of individuals responsible for each role (for various stages of the connection works) will be determined as part of the detailed CoCP(s).

Table 1: Hornsea Four Construction Roles and Responsibilities.

Role	Responsibility
Primary Management	
The Applicant's Onshore Project Management Team	Responsible for coordinating onshore construction activities for Hornsea Four on behalf of the Applicant.
The Principal Contractor(s) Onshore Project Management Team	Responsible for coordinating the construction of Hornsea Four for the works within each Principal Contractor(s) respective contracts.
Secondary Management	
Roles to be specified as part of the detailed CoCP(s)	The secondary management team will comprise Quality, Health, Safety and Environment (QHSE) management, Site Manager(s) and Environment Manager(s), with a range of responsibilities between the Applicant and the Principal Contractor(s). The secondary management team will be responsible for maintaining the detailed CoCP document(s) and systems; ensuring environmental standards are adhered to and monitoring compliance during construction; carrying out regular monitoring and inspections of construction work activities for their relevant package of works; and undertaking staff induction courses on environmental issues. Responsibilities will also include managing the interface between the environmental specialists and engineers. They will have the primary responsibility for discharging the relevant DCO Requirements and licence conditions, managing environmental issues through construction and post-construction monitoring and for obtaining relevant licences and consents.
Technical Roles	
Ecological Clerk of Works (ECoW)	The ECoW will be appointed by the Applicant and will report on ecological matters and will be responsible for undertaking pre-construction surveys and monitoring throughout the construction period, where and when appropriate. The ECoW will also be responsible for ensuring all ecological commitments are met and compliance with the conditions of any protected species licences. It is anticipated that the ECoW will report to the Applicant's Environment Manager(s) (see secondary management above).
Agricultural Liaison Officer (ALO)	The ALO will be appointed by the Applicant prior to the commencement of onshore site preparation works and will be the prime contact for ongoing engagement about practical matters with landowners, occupiers and their agents before and during the construction process. There may be more than one ALO if required. The ALO will have relevant experience of working with landowners and agricultural businesses and will have knowledge of the compulsory acquisition process (if required) and working on a linear infrastructure project. The ALO (or their company) will be contactable within the core working hours (see Section 5.1) during the construction phase to landowners, agents and occupiers and

Role	Responsibility
	will provide 24-hour team or company contact details for use in the event of emergency. Post-construction the ALO will remain appointed for up to one year in order to manage remediation issues. The ALO will have responsibility for liaising with landowners, agents and occupiers, including the following examples: • Coordinating remaining drainage surveys and sharing pre and post-construction drainage schemes with landowners or occupiers in advance for their consideration; • Coordinating the provision of a detailed pre-construction condition survey (where necessary pre-application, accounting for surveys undertaken pre-application) to include a soil survey as detailed in **Appendix B**; • Advising on risks relating to the translocation of soil diseases, where necessary, and ensuring appropriate protective provisions are implemented; • Undertaking pre-construction liaison with affected parties to minimise disruption, where possible, to existing farming regimes and timings of activities; • Arranging quarterly meetings with landowners or their agent representatives, where considered necessary; • Undertaking site inspections during construction to monitor working practices and ensure landowners' and occupiers' reasonable requirements are fulfilled; and • Discussing and agreeing reinstatement measures following completion of the works. As identified in **Appendix B**, a soil specialist will be appointed by the Applicant (as part of the ALO role or in addition).
Construction Traffic Management Plan Coordinator (CTMPco)	Responsible for (further detail provided in **Appendix F**): • Managing the implementation of the approved CTMP(s); • Collating monitoring data and preparing monitoring report; • Liaison with the Community Liaison Officer regarding traffic matters associated with the local community; and • Acting as a point of contact for construction workers and sub-contractors.
Archaeological Coordinator	The archaeological coordinator's and contractor's role is detailed within **F2.10: Outline onshore Written Scheme of investigation**.
Community Liaison Officer (CLO)	The CLO will be appointed by the Applicant and will be responsible for community outreach for Hornsea Four during construction. The CLO will attend public meetings including liaison with community groups and will manage all contact with local residents, local groups, schools, emergency services and local businesses with regard to general construction works matters in accordance with the parameters established in the Communications Plan (see **Table 2**).

3 Accompanying plans to the CoCP

3.1.1.1 Table 2 sets out the documents which have been appended to the outline CoCP or will be prepared and form appendices to the detailed CoCP(s) for approval prior to the relevant stage of the connection works. Table 3 sets out other relevant documents which are stand alone to the outline CoCP.

Table 2: Documents to form appendices to the detailed CoCP(s).

Document and Purpose	Status	Approval Body
Onshore Biosecurity Risk Assessment Sets out management measures for biosecurity risks, including invasive non-native species, diseases and pathogens during construction.	An Outline Onshore Biosecurity Risk Assessment is provided in Appendix A and will be refined as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor and ECoW.	East Riding of Yorkshire Council (ERYC)
Soil Management Strategy Sets out measures to conserve soil resources; avoid damage to soil structure; maintain soil drainage during construction; and identify principles for the reinstatement of the soil profile following the construction of Hornsea Four.	An Outline Soil Management Strategy is provided in Appendix B and will be refined as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor and ALO.	ERYC in consultation with the Environment Agency if necessary.
Public Right of Way Management Plan Sets out management measures for public right of way (PRoW) including bridleways and footpaths and other routes for non-motorised users during construction.	An Outline PRoW Management Plan is provided in Appendix C and will be refined as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor.	ERYC
Emergency Response and Pollution Control Plan This will set out details of the anticipated hazards and conditions at each work site and emergency procedures in cases of spillages or leaks during construction.	An Emergency Response and Pollution Control Plan will be developed post-consent as part of the detailed CoCP(s) approved under DCO Requirement 17.	ERYC in consultation with the Environment Agency, the relevant SNCBs and, if applicable the MMO.
Pollution Prevention Plan Sets out details of measures to manage pollution prevention onshore during construction.	An Outline Pollution Prevention Plan is provided in Appendix D and will be refined as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor.	ERYC

Document and Purpose	Status	Approval Body
Bentonite Break Out Plan This will describe the procedure and measures for dealing with a bentonite breakout from a HDD in a watercourse.	A Bentonite Break Out Plan will be developed post-consent as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor. It will be in accordance with the outline measures set out in **Appendix D** Pollution Prevention Plan.	ERYC in consultation with the Environment Agency, the relevant SNCBs and, if applicable the MMO.
Site Waste Management Plan (SWMP) Sets out the indicative types of waste that will be generated, how waste will be managed, and the methods used to measure and record the quantity of waste generated during construction.	An Outline SWMP is provided in **Appendix E** and will be refined as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor.	ERYC
Communications Plan Framework for engaging stakeholders (methods of contacting and engaging with affected groups, methods of providing advance notifications); roles and responsibilities for implementing the communication plan; and complaints procedure to be implemented.	A Communication Plan will be developed post-consent as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor.	ERYC
Crossing Method Statements Sets out the construction operations to be undertaken (including construction methods and types of plant required) and the associated environmental and health and safety issues for certain crossings where an increased risk is identified. The method statements will include details of crossing techniques to be deployed at crossings, including sensitive environmental crossings (such as main rivers). These will be developed with the relevant asset owner or key stakeholder such as the Environment Agency.	Full list of crossings associated with the onshore ECC is included in **Volume A4, Annex 4.2: Onshore Crossing Schedule**. Generic and specific Crossing Method Statements will be created in line with information provided in **Section 5.8.2**.	ERYC in consultation with the relevant SNCBs and Environment Agency, where appropriate.
Construction Lighting Plan Sets out the lighting details for relevant stages of the connection works.	A Construction Lighting Plan will be developed post-consent as part of the detailed CoCP(s) approved under DCO Requirement 17, upon appointment of a Principal Contractor. The plan will be developed in line with information provided in **Section 5.4**.	ERYC in consultation with the relevant SNCBs, where appropriate.

Table 3: Plans to form stand-alone documents.

Document and Purpose	Status	Relevant DCO Requirement	Approval Body
Ecological Management Plan	An outline version is provided in Volume F2.3.	10	ERYC in consultation with the relevant SNCBs and EA where appropriate.
Construction Drainage Scheme	An outline version is provided in Volume F2.6.	13	Lead local flood authority (LLFA) in consultation with the relevant sewerage and drainage authorities and the Environment Agency.
Contaminated Land and Groundwater Scheme	To be submitted prior to commencement of the relevant stage of connection works.	14	ERYC in consultation with the Environment Agency and, to the extent that the plan relates to the intertidal area, the MMO.
Onshore Infrastructure Drainage Strategy	An outline version is provided in Volume F2.6.	15	LLFA in consultation with the Environment Agency.
Onshore Written Scheme of Investigation (WSI)	An outline version is provided in Volume F2.10	16	ERYC in consultation with the Historic Buildings and Monuments Commission for England.
Construction Traffic Management Plan (CTMP)	An outline CTMP is provided in Appendix F of this outline CoCP. The detailed CTMP will form a separate submission prior to commencement of the relevant stage of the connection works.	18	ERYC in consultation with the relevant highway authorities.

3.1.1.2 Additionally, details of any temporary fences, walls or other means of enclosure will be provided as per Requirement 12 of the DCO. This will be in accordance with the information presented in Section 5.3 and will either form a separate appendix to the detailed CoCP(s) or will form a section of the main document.

4 General Principles

4.1 Environmental Management Principles

4.1.1.1 Hornsea Four will be constructed in an environmentally sensitive manner and will meet the requirements of all relevant legislation, codes of practice and standards as identified in the DCO, Environmental Statement (ES) and any updates to legislation or standards adopted at the time of construction to limit the adverse impacts on the local community and environment as far as reasonably practicable.

4.1.2 Commitments

4.1.2.1 Through the EIA process Hornsea Four have identified Commitments which seek to eliminate or reduce impacts or adopt best practice guidance as part of the project and are recorded within the Commitments Register (see **Volume A4, Annex 5.2**). Where relevant, such commitments are detailed within subsequent sections of this outline CoCP and in Appendices.

4.1.3 Environmental Management Systems

4.1.3.1 Each Principal Contractor is to be British Standard (BS) EN ISO 14001 (Environmental Management System (EMS)) certified. The EMS will provide the process for which environmental management is undertaken to ensure that the relevant mitigation and commitments identified in the ES are addressed during the construction phase. The EMS will set out the:

- procedures to be implemented to monitor compliance with environmental legislation and other relevant requirements;
- key environmental aspects of the construction works and how they will be managed;
- staff competence and training requirements;
- record-keeping arrangements; and
- monitoring compliance and the effectiveness of the measures included within the detailed CoCP(s).

4.1.3.2 All Principal Contractors and their Contractors will be required to plan their works in advance to ensure that (without significant implication on health and safety procedures), measures to reduce environmental effects and ensure that any commitments documented in the DCO, the principles established in detailed CoCP(s), and commitments made in the ES are complied with.

4.2 Local Community Liaison

4.2.1.1 A Communication Plan will be developed post-consent as part of the detailed CoCP(s) to be approved under DCO Requirement 17 (see **Table 2**). The Communications Plan will ensure a proactive approach to communication with local stakeholders and will include a complaints procedure to be implemented during the construction process. The plan will include the appointment of a Community Liaison Officer (see **Section 2.3**).

4.2.1.2 The Principal Contractor(s) will implement a proactive approach in communications. Occupiers of nearby properties and relevant planning authorities will be informed in advance of works taking place, (in particular, those affecting PRoW and local roads) including the duration of the works. The means of notification will be finalised as a communication plan is developed post consent as part of the detailed CoCP(s) (see **Table 2**).

4.2.1.3 A complaints procedure will be implemented during the construction process (to be set out within the Communication Plan in the detailed CoCP(s). Complaints will be investigated, and where required and available, mitigation will be implemented if possible. All calls will be logged and the response will be recorded.

5 General Site Operations

5.1 Working Hours

5.1.1.1 Commitments made by Hornsea Four that are relevant to working hours are detailed in Table 4:

Table 4: Commitments relevant to Working Hours.

Commitment ID	Measure Proposed	How the measure will be secured
Co36	Primary: Core working hours for the construction of the onshore components of Hornsea Four will be as follows: • Monday to Friday: 07:00 - 18:00 hours; • Saturday: 07:00 - 13:00 hours; • Up to one hour before and after core working hours for mobilisation ("mobilisation period"), i.e. 06:00 to 19:00 weekdays and 06:00 to 14:00 Saturdays; and • Maintenance period 13:00 to 17:00 Saturdays. Activities carried out during mobilisation and maintenance will not generate significant noise levels (such as piling, or other such noisy activities). In circumstances outside of core working practices, specific works may have to be undertaken outside the core working hours. ERYC will be informed in writing.	DCO Requirement 17 (Code of construction practice)

5.1.1.2 During the mobilisation period, the Principal Contractor(s) and their Contractors may undertake the following activities:

- Arrival and departure of the workforce at the site and movement to and from areas across the project;
- Site inspections and safety checks; site meetings (briefings and quiet inspections/walkovers);
- Site clean-up (site housekeeping that does not require the use of plant); and
- Low-key maintenance, safety checking of plant and machinery (provided this does not require or cause hammering or banging).

5.1.1.3 Mobilisation does not include heavy goods vehicle (HGV) movements into and out of the construction areas (i.e. HGV movements should only occur at the construction areas during the core working hours unless otherwise agreed) but suppliers can make use of the wider highway network outside these hours to travel.

Continuous working hours

5.1.1.4 In certain circumstances, specific works may have to be undertaken on a continuous working basis (00:00 to 00:00 Monday to Sunday).

5.1.1.5 During this period, some activities may be undertaken on a continuous cycle without correspondence with ERYC (no further consent required, although activities would be subject to the other applicable controls and measures set out in the outline CoCP/detailed CoCP(s)). These activities comprise:

- Running of support generators or emergency backup supplies;
- Unplanned remedial works, for example in the event of severe weather; and
- Security of sites and protection of open assets.

5.1.1.6 The following activities that may require continuous working hours will be communicated to ERYC in writing:

- HDD operations. These activities may require 24-hour machinery operation, dependent on the ground conditions;
- Substation component installation;
- Oil filling of transformers at the OnSS; and
- Jointing operations along the onshore ECC.

Activities outside of the core working hours

5.1.1.7 In addition, it may be beneficial to carry out several activities outside of the standard working hours to utilise periods such as abnormal loads/construction plant delivery, works within the highway/footpaths, or works affecting operational railways.

5.1.1.8 Activities outside of the standard working hours will be agreed with the relevant local authority in consultation with relevant stakeholders (e.g. third-party asset owner) as required.

5.2 General site layout and good housekeeping

5.2.1.1 A good housekeeping policy will be applied to the construction areas at all time. As far as reasonably practicable the following principles will be applied:

- All working areas will be kept in a clean and tidy condition;
- Adequate welfare facilities will be provided for all construction staff;
- All necessary measure will be taken to minimise the risk of fire and the contractor will comply with all the requirements of the local fire authority;
- Waste from construction areas will be stored securely to prevent wind-blown waste;
- Smoking areas at site logistics compounds will be equipped with containers for smoking wastes – these will not be located at the boundary of working areas or adjacent to neighbouring land;

- Open fires will always be prohibited; and
- Waste (particularly food waste) will be removed from the welfare facilities at frequent intervals.

5.3 Site security, screening and fencing

Commitments made by Hornsea Four that are relevant to site security, screening and fencing are detailed in **Table 5**.

Table 5: Commitments relevant to Site Security, Screening and fencing.

Commitment ID	Measure Proposed	How the measure will be secured
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 17 (Code of construction practice) (relevant to temporary fencing) DCO Requirement 12 (Fencing and other means of enclosure) (relevant to permeant fencing)
Commitments of relevance to fencing are also outlined in **Section 6.3**, **Section 6.4** and **Section 6.5** (hydrology, ecology, landscape and visual (Co157 and Co27))		

5.3.1.1 A Fencing and Enclosure Plan (see **Table 2**) will be either appended to the detailed CoCP(s), or detailed text included within the main detailed CoCP(s), dependant on the approach pre-construction. Logistics compounds will be secured with fencing with lockable gates to minimise the opportunity for unauthorised entry. Temporary fencing will be installed along the onshore ECC to define the Hornsea Four works areas. The type of fencing to be used will be dependent on the land use where the easement crosses it. Appropriate fencing will be selected to suit the location and purpose. Fencing may consist of:

- Post and rope for arable land;
- Post and rail for horse fields; and
- Post mesh and wire/barb for cattle and sheep.

5.3.1.2 All boundaries, fencing and screens will be maintained in a tidy condition and will be fit for purpose.

5.3.1.3 All temporary screening and fencing will be removed as soon as reasonably practicable following completion of the connection works.

5.3.1.4 Where possible, access to construction areas will be limited to specified entry points and all personnel entries/exits will be recorded for security and health and safety purposes.

5.3.1.5 Where the haul road meets a public highway, it will be gated or otherwise secured, where feasible and necessary, to prevent unauthorised access.

5.4 Lighting

5.4.1.1 Commitments made by Hornsea Four that are relevant to lighting are shown in Table 6.

Table 6: Commitments relevant to lighting.

Commitment ID	Measure Proposed	How the measure will be secured
Co69	Secondary: Construction site lighting will only operate when required and will be positioned and directed to avoid unnecessary illumination to residential properties, sensitive ecological receptors, footpath users, and minimise glare to users of adjoining public highways. Construction site lighting will be designed in accordance with latest relevant available guidance and legislation and the details of the location, height, design and luminance of lighting to be used will be detailed within the final Code of Construction Practice. The design of construction site lighting will accord with the details provided in the Outline Code of Construction Practice (Co124) and Outline Ecological Management Plan (Co168).	DCO Requirement 17 (Code of construction practice) DCO Requirement 10 (Ecological Management Plan)

5.4.1.2 A Construction Lighting Plan (see Table 2) will be either appended to the detailed CoCP(s), or detailed text included within the main detailed CoCP(s), dependant on the approach pre-construction. Site lighting will be provided to ensure the safety of work and to maintain security on the construction sites. The design will ensure that any artificial light emitted from premises will not be prejudicial to health or be a nuisance as required by the Environmental Protection Act 1990.

5.4.1.3 Lighting during construction will take into account the requirements set out in BS EN 12464-2:2014 (BSI, 21014). Lighting units will be designed to minimise illumination outside the construction works area, e.g., will be directional, task orientated and where possible, fully shielded.

5.4.1.4 In respect to logistics compounds, low levels of security lighting may be required, at the entrance to the sites and office facilities as well as around the perimeter of the compounds. Lighting fixtures would be no greater than 4 m in height to avoid spill towards sensitive receptors including residential properties.

5.4.1.5 At the OnSS site, in order to provide consideration for foraging/commuting bats currently utilising the vegetation to the north of the OnSS and temporary works area, up to a 10 m wide 'dark corridor' buffer will be implemented within these areas, as well as to the east of the OnSS. Lighting during construction (and operation) will be directed away from this dark corridor (see F2.3: Outline Ecological Management Plan).

5.5 Emergency planning and procedures

5.5.1.1 Emergency procedures will be developed for the onshore elements of Hornsea Four which will take into account the anticipated hazards and conditions at each work site. Such procedures will be documented in an Emergency Response and Pollution Control Plan (see Table 2) which will include appropriate procedures such as fire and site evacuation and emergency pollution control measures. The Emergency Response and Pollution Control Plan will also contain emergency phone numbers and the method of notifying the relevant local and statutory authorities. The procedures will be displayed at the work site and all staff will be required to follow them.

5.5.1.2 For more information relating to the risk of flooding, please refer to the Emergency Flood response covered in F2.6: Outline Onshore Infrastructure Drainage Strategy. In the event of extreme weather with the risk of flooding, contractors and management should liaise with the LLFA and Environment Agency so they are aware of any forecast related to heavy rainfall events. A flood warning can then be issued when necessary to allow work to stop, especially in areas in close proximity to key watercourses. This will include an Emergency Response and Pollution Control Plan, which will identify potential sources and activities which might result in the risk of pollution from construction. The Plan will present proactive management practices to ensure that any pollution that is not prevented, is minimised, controlled, reported to the relevant parties and remediated.

5.6 Pollution prevention

5.6.1.1 A Pollution Prevention Plan (as part of the detailed CoCP(s)) will be developed based on the Outline Pollution Prevention Plan (Appendix D), which recognises the risk of pollution from the onshore construction activities and presents pro-active management measures to ensure that any pollution that may occur is prevented where possible.

5.6.1.2 In addition, an Emergency Response and Pollution Control Plan will be developed as part of the detailed CoCP(s) which will set out details of the emergency procedures in cases of spillages or leaks during construction.

5.6.1.3 Commitments relevant to pollution incident control are shown in Table 7.

Table 7: Commitments relevant to pollution incident control.

Commitment ID	Measure Proposed	How the measure will be secured
Co4	Tertiary: A Pollution Prevention Plan (PPP) will be developed in accordance with the outline PPP and will include details of emergency spill procedures. Good practice guidance detailed in the Environment Agency's Pollution Prevention Guidance (PPG) notes (including PPG01, PPG05, PPG08 and PPG21) will be followed where appropriate, or the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)

Commitment ID	Measure Proposed	How the measure will be secured
Co6	Tertiary: During construction of piled foundations, the following guidance will be used: Piling and Penetrative Ground Improvement Methods on land Affected by Contamination: Guidance on Pollution Prevention (Environment Agency, 2001), or latest relevant available guidance.	
Co13	Tertiary: Where cable trenching or road widening of the construction accesses is required across perched or near-surface secondary A or B aquifers, measures will be implemented to protect groundwater quality. These will be detailed within the Pollution Prevention Plan (PPP) (Co4). Additionally, in such areas, thermally insulated cables will be used to minimise effects on groundwater temperature). Furthermore, measures to ensure that the cable trench does not become a conduit for groundwater flow will also be implemented. All such measures will be identified following consultation with the Environment Agency and will be reported within the CoCP (Co124) and in line with the requirements of Section 23-25 of the Land Drainage Act 1991, or the latest relevant available guidance.	

5.7 Pest control

5.7.1.1 The risk of pest/vermin infestation will be minimised by ensuring any putrescible waste is stored appropriately and regularly collected form the construction areas, and effective prevention pest control measures are implemented. Any pest infestation will be dealt with promptly and notified to the relevant local authority as soon as reasonably practical.

5.8 Construction methodology

5.8.1.1 Commitments relevant to construction methodology are shown in **Table 8**.

Table 8: Commitments relevant to construction methodology.

Commitment ID	Measure Proposed	How the measure will be secured
Co1	Primary: All Environment Agency (EA) main rivers, Internal Drainage Board (IDB) maintained drains, main roads and railways will be crossed by HDD or other trenchless technology as set out in the Onshore Crossing Schedule. Where HDD technologies are not practical, the crossing of Ordinary watercourses may be undertaken by open cut methods. In such cases, temporary measures will be employed to maintain flow of water along the watercourse. Main rivers will not be temporarily dammed and/or rerouted.	DCO Requirement 17 (Code of construction practice)
Co41	Primary: All HDD crossings will be undertaken by non-impact methods in order to minimise construction vibration beyond the immediate location of works.	

Commitment ID	Measure Proposed	How the measure will be secured
Co187	Secondary: The installation of the offshore export cables at landfall will be undertaken by Horizontal Directional Drilling or other trenchless methods.	

5.8.2 Crossing method statements

5.8.2.1 Prior to commencing specific activities, such as the crossing of a watercourse or other infrastructure such as a Strategic Road or railway, the Principal Contractor(s) will develop Crossing Method Statements which will set out the construction operations to be undertaken (including construction methods and types of plant required) and the associated environmental, and health and safety issues. The activities requiring a method statement will be identified using a risk-based approach pre-construction. A generic method statement will be prepared for horizontal direction drill (HDD) and open cut crossings of watercourses, with specific crossing method statements for particularly sensitive locations (Co18). The method statements and the crossing design will be developed during the pre-construction design stage and provided as an appendix for approval prior to the relevant stage of works as part of the detailed CoCP(s) as set out **Section 3**. The design of bridge crossings over EA main rivers will be agreed with the EA prior to the construction of each bridge.

5.8.3 Landfall temporary construction ramp

5.8.3.1 A temporary construction ramp (DCO Works Number 9d (**C1.1: Draft DCO including DML**)) has been included within the Hornsea Four Order Limits to provide access to the landfall connection works on the beach (Works Number 5 (**C1.1: Draft DCO including DML**)). This access will be used if unforeseen circumstances occur which require beach access. An accompanying temporary access track would also be required.

5.8.3.2 Once the temporary access road has reached the edge of the cliff, pre-filled stone or sand bags can be lowered on to the beach using a small excavator until the beach is level with the road and the tracked excavator can traverse on to the beach to prepare a suitable ramp access to allow vehicles to pass safely between the track and the beach. A small micro bridge can then be installed at the crossing location to ensure that the field and beach below is suitably protected from any required beach traffic. The temporary access track would cross the cliff top and extend to the upper foreshore to allow the required vehicles construction access to the upper foreshore.

5.8.3.3 The location for nearshore access is presently low lying relative to the beach (0.75-1.0 m), it would therefore be expected that any required ramp construction would be minimal at this location, as the cliff height extends over a distance of 8-15 m, suitable for the construction traffic which may be required on the beach. The actual construction method would take into consideration the extent of any subsequent erosion prior to construction commencing.

5.9 Clearance of site on completion

5.9.1.1 Following completion of construction, all logistics compounds will be removed and land within the working area will be restored to its original condition. Commitments of relevance are shown in **Table 9**.

Table 9: Commitments relevant to site clearance.

Commitment ID	Measure Proposed	How the measure will be secured
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 17 (Code of construction practice)
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 20 (Restoration of land used temporarily for construction)
Co68	Secondary: All logistics compounds will be removed and sites will be reinstated when construction has been completed.	

5.9.1.2 Following completion of the onshore cable works, the working area will be reinstated to a state commensurate with condition prior to the commencement of works (or subject to landowner agreement, improved, according with details set out in **F2.14: Outline Enhancement Strategy**). This will include:

- Reinstatement of topsoil and subsoil, including loosening or ripping of compacted soil;
- Reinstatement of land drainage systems, where necessary post construction drains may be installed, typically parallel to the onshore ECC;
- Reseeding of any fields of grassland, grass margins and ditch banks;
- Reconstruction of any drains or ditches crossed using an open cut method;
- Replanting of any hedgerows or felled shrubs as detailed in the Landscape Management Plan, approved by the local planning authority in accordance with the principles established in the Outline Landscape Management Plan (**F2.8**);
- Restoration or repair of fences, gates, tracks or hard standing; and
- Reinstatement of PRoW where temporary diversions have been put in place during construction.

5.10 Temporary logistics compounds

5.10.1.1 The application provides for a hierarchy of logistics compounds.

Landfall compound

5.10.1.2 A landfall compound (DCO Works Number 9c (**C1.1: Draft DCO including DML**)) will be required near to the Hornsea Four intertidal area, on the onshore side of the beach, the specifications for which are outlined in **Volume A1, Chapter 4: Project Description**. The

purpose of this compound will be to support the intertidal works and will house the Transition Joint Bays works as well as any HDD works, including supporting equipment and facilities. The compound is typically established by and operated by the Principal Contractor for intertidal works and are limited to the period required for the installation of the intertidal works.

OnSS and EBI temporary works area

5.10.1.3 A temporary works area (DCO Works Number 9b (**C1.1: Draft DCO including DML**) will be required at the OnSS and EBI to support construction. The compound will be located within the footprints of the permanent works and/or in the areas of adjacent temporary land take and their use will be limited to the period required for the installation of the OnSS and EBI.

Onshore ECC logistics compounds

5.10.1.4 Logistics compounds (DCO Works Number 9c (**C1.1: Draft DCO including DML**)) will be required to support the construction of the onshore ECC. A primary logistics compound would be built as a focal hub for the Principal Contractor(s), sub-contractors and the Applicant for the duration of the works and would be constructed approximately three months before the onshore ECC works commence at any location and would remain for the duration of the construction and approximately three months beyond (up to approximately 36 months in total). It may be necessary to retain part of the compound during the commissioning stages of Hornsea Four. The secondary logistics compounds are located strategically along the onshore ECC to support onshore construction activities. The logistics compounds will be in place for period of up to 36 months and would potentially include:

- Office accommodation, including all desks, seating, office storage, welfare etc. to accommodate all staff (60+);
- Meeting Rooms;
- All relevant utility services, power, water, heating, lighting telecommunications, internet and Wi-Fi connections;
- Electrical generators (if required);
- Printing, scanning and copying facilities;
- Car parking for all project staff;
- Canteen facilities;
- Drying, storage and changing facilities for Personal Protective Equipment;
- Material storage;
- Waste storage;
- Cable drum storage and logistics;
- Security fencing; and
- Security.

5.10.1.5 It is noted that not all logistics compounds identified within the Hornsea Four order limits will include all of the features outlined above. Some logistics compounds will be used for storage, dependant on construction programme and methodology.

5.10.1.6 Logistics compounds may also operate as support bases for the onshore construction works as the cable work fronts pass through an area. They may house portable offices, welfare facilities, localised stores, as well as acting as staging posts for localised secure storage for equipment and component deliveries.

5.10.1.7 Storage locations would also be required along the Hornsea Four onshore ECC. These would operate as areas where some limited additional storage may be provided in addition to that land provided for along the onshore ECC.

5.10.1.8 In establishing and operating the logistics compounds, the Principal Contractor(s) will:

- Ensure any crossing points over existing local services will be installed in a manner agreed with the asset owner;
- Ensure surface runoff is managed appropriately;
- Ensure any temporary services necessary to support the logistics compounds will be installed in a manner agreed with the landowner and service provider;
- Use external lighting only during periods of poor visibility due to weather conditions or low light levels (see **Section 5.4** for further details on construction lighting);
- Use low levels of security lighting where required, i.e. at the perimeter of the site, at the entrance to the site and office facilities; and
- Ensure access and egress to the logistics compounds are suitable for their location with appropriate access gates and signage.

HDD compounds

5.10.1.9 It is envisaged that only the larger HDDs (i.e. typically greater than 200 m in length) will require an additional logistics compound (stoned compounds), which will be used to contain the drilling rig, equipment and the drill entry and exit pit. Any structures at the compounds will be no greater than one storey in height, whilst any portable task lighting or security lighting fixtures (used in times of low natural light) would be no greater than 4 m in height and directional to avoid light spill. These additional compounds have all been provided for within the onshore ECC (i.e. within the Order Limits) and will, where possible, be located in areas which reduce interference with farming operations and minimise impacts to residential properties, ecologically sensitive receptors and landowners use of their land. The size of the HDD compounds is dependent on the amount of equipment that is required to construct the crossing, which in turn is primarily governed by the length of the HDD or its complexity. The maximum parameters are outlined in **Volume A1, Chapter 4: Project Description**.

5.10.1.10 The HDD compounds will be provided with suitable surfacing, with some constructed from stone in a similar way to the haul roads for the main cable laying activities. The compound will be secured by fencing (see **Section 5.3**) and provided with lockable gates to control access where necessary. Appropriate drainage and sediment control measures will be implemented to control surface run-off from the compound where required (**Appendix D**).

6 Management of Onshore Environmental Issues

6.1.1.1 The following sections provide outline measures in relation to the management of onshore environmental issues during construction. These measures are based upon the environmental impact assessments undertaken in **Volume A3** of the Hornsea Four Application, in addition to the relevant commitments Hornsea Four have identified through the EIA process which are fully detailed within the Commitments Register (see **Volume A4, Annex 5.2**). These measures and commitments will be further developed within the detailed CoCP(s) required under Requirement 17 of the DCO. The topic areas detailed below align with the chapters of **Volume A3** of the ES.

6.2 Geology and Ground Conditions

6.2.1 Objective

6.2.1.1 To protect receptors relevant to Geology and Ground Conditions, including the underlying secondary and principal aquifers in terms of groundwater quality and flow.

6.2.2 Commitments

6.2.2.1 **Table 10** details the commitments relevant to Geology and Ground Conditions that are to be secured through the CoCP. Where information is available at this stage, further detail on the proposed management measures is also provided in **Section 6.2.3**.

Table 10: Geology and Ground Conditions Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co8	Tertiary: Soil will be stored and managed in accordance with DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Ref PB1328) or the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co18	Secondary: HDD entry and exit points will be located at least 9 m away from IDB and Ordinary surface watercourses and 20m from EA surface water courses or the landward toe of the EA surface watercourse's flood defences. Where a surface watercourse is to be crossed by HDD, the onshore export cables will be installed at least 1.2 m beneath the hard bed of any watercourses and the optimal clearance depth beneath watercourses will be agreed with the relevant authorities prior to construction. Where EA flood defences are present a minimum 1.2 m vertical clearance will be maintained between the hard bed of the watercourse and the landward toe of those flood defences. Where Hornsea Four crosses sites of particular sensitivity (e.g. embanked EA watercourses, SSSIs or groundwater Inner Source Protection Zones (SPZs)) a hydrogeological risk assessment will be undertaken to inform	

Commitment ID	Measure Proposed	How the measure will be secured
	a site specific crossing method statement which will also be agreed with the relevant authorities prior to construction.	
Co61	Secondary: Prior to the commencement of works, the contractor (or project appointed Agricultural Liaison Officer) will undertake soil condition surveys and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles. Such work will inform the reinstatement under Co10.	
Co64	Tertiary: Topsoil and subsoil will be stored in separate stockpiles in line with DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298 or the latest relevant available guidance. Any suspected or confirmed contaminated soils will be appropriately separated, contained and tested before removal (if required).	DCO Requirement 17 (Code of construction practice) DCO Requirement 14 (Contaminated land and groundwater scheme)
Co65	Tertiary: A Site Waste Management Plan (SWMP) will be developed in accordance with the Outline Site Waste Management Plan, with consideration of the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co76	Tertiary: Appropriate Personal Protective Equipment (PPE) will be used and relevant good working practices applied to avoid potential risk to human health from any potential ground contamination, in line with relevant available guidance.	
Additional general commitments relevant to Geology and Ground Conditions (Co1, Co4, Co6, Co10, Co13, Co41, Co68, Co187) are not repeated in this table. For full details on these Commitments see Section 5.		

6.2.2.2 Also, of particular relevance, but not secured in this outline CoCP, DCO Requirement 14 (Contaminated land and groundwater scheme) requires a contaminated land and groundwater scheme to be prepared to identify any contamination and any remedial measures which may be required (Co77). The scheme will be developed in line with Land Contamination: Risk Management Framework (Environment Agency 2021) (or latest available guidance) which sets out the contaminated land framework and outlines the process of desk study through to remediation verification and the different stages of risk assessment.

6.2.3 Management Measures

6.2.3.1 Topsoil will be stripped and stored in such a way that it is not mixed with subsoil or trafficked on by vehicles. Soil from different fields and hedgerow areas will be separated. Subsoil will be excavated from the trench line and stored separately. The soil storage period will be kept to a minimum so that no significant deterioration in soil fertility due to anaerobiosis (absence of oxygen) can occur. The underground cable will be buried to a target depth of approximately 1.2 m (to the top of the tile covering) in agricultural land. Best practices for soils handling will be adopted and detailed 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. Further details are provided in the Outline Soil Management Strategy (Appendix B).

6.3 Hydrology and Flood Risk

6.3.1 Objective

6.3.1.1 To minimise the risk of surface water flooding during the construction phase, to prevent pollution of surface watercourses and to minimise the impact on local surface water features.

6.3.2 Commitments

6.3.2.1 Table 11 details the commitments relevant to Hydrology and Flood Risk that are to be secured through the CoCP.

Table 11: Hydrology and Flood Risk Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co8	Tertiary: Soil will be stored and managed in accordance with DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Ref PB1328) or the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co18	Secondary: HDD entry and exit points will be located at least 9 m away from IDB and Ordinary surface watercourses and 20m from EA surface water courses or the landward toe of the EA surface watercourse's flood defences. Where a surface watercourse is to be crossed by HDD, the onshore export cables will be installed at least 1.2 m beneath the hard bed of any watercourses and the optimal clearance depth beneath watercourses will be agreed with the relevant authorities prior to construction. Where EA flood defences are present a minimum 1.2 m vertical clearance will be maintained between the hard bed of the watercourse and the landward toe of those flood defences. Where Hornsea Four crosses sites of particular sensitivity (e.g. embanked EA watercourses, SSSIs or groundwater Inner Source Protection Zones (SPZs)) a hydrogeological risk assessment will be undertaken to inform a site specific crossing method statement which will also be agreed with the relevant authorities prior to construction.	
Co64	Tertiary: Topsoil and subsoil will be stored in separate stockpiles in line with DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298 or the latest relevant available guidance. Any suspected or confirmed contaminated soils will be appropriately separated, contained and tested before removal (if required).	DCO Requirement 17 (Code of construction practice) DCO Requirement 14 (Contaminated land and groundwater scheme)

Commitment ID	Measure Proposed	How the measure will be secured
Co65	Tertiary: A Site Waste Management Plan (SWMP) will be developed in accordance with the Outline Site Waste Management Plan, with consideration of the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co147	Tertiary: Appropriate liaison will take place with the Internal Drainage Board during construction.	
Co157	Secondary: Fences, walls, ditches and drainage outfalls will be retained along the onshore export cable corridor and landfall, where possible. Where it is not reasonably practicable to retain them, any damage will be repaired and reinstated as soon as reasonably practical. The Environment Agency must be notified if damage occurs to any EA Main river or related flood infrastructure.	
Co170	Secondary: Joint bays and link boxes will be located a minimum of 20 m away from Environment Agency (EA) Main rivers.	
Co172	Secondary: The bed and banks of watercourses will be reinstated to their pre-construction condition following the removal of any temporary structures. Culverts will not be used for temporary access track crossings across EA Main Rivers. Where a temporary access track crossing across an EA Main River may be required, clear span/ bailey bridges will be used. There will be no loss of cross-sectional area to Environment Agency (EA) Main rivers.	
Co175	Secondary: A pre and post construction condition survey will also be undertaken at each Environment Agency (EA) Main river crossings, including any flood defences to be crossed. The scope and methodology of the survey will be agreed in advance with the EA. On completion of the project, details of the surveys under each Main River and flood defence will be submitted to the EA.	
Co183	Secondary: Where reasonably practicable the design of all temporary access tracks within the floodplain of EA Main rivers (defined as areas of Flood Zone 2 and 3, as shown on the Environment Agency Flood Map for Planning), areas at risk of surface water flooding (as shown on the Risk of Flooding Surface Water maps), or in areas included on the historic flood map (from any source) will replicate or be as consistent with existing ground levels as possible, to limit any effects on future flood risk.	
Co184	Secondary: Where the permanent access track to the OnSS may be required to pass over an existing watercourse, the crossing will be appropriately designed to maintain floodplain capacity and/or flow conveyance, where reasonably practicable. This shall include an allowance for the predicted effects of climate change.	
Co185	Secondary: Where the permanent access track to the OnSS is within areas of flood risk (as shown on the Environment Agency Flood Map for Planning) it will be appropriately designed to maintain existing ground elevations to ensure continued floodplain capacity and/or flow conveyance, where reasonably practicable.	

Commitment ID	Measure Proposed	How the measure will be secured
Co186	Tertiary: Where works to an EA Main river or ordinary watercourse are necessary, the appropriate permits and consents will be sought from the relevant authority as required. Details of the locations and work undertaken on any EA Main river or associated flood defences, including any reports or records, will be submitted to the Environment Agency.	
Co197	Secondary: Where reasonably practicable, topsoil & subsoil stockpiling within the floodplain (defined as areas of Flood Zone 2 or 3 as identified on the Environment Agency Flood Map for Planning) of any EA Main River will be avoided at the Onshore Substation	
General Commitments relevant to Hydrology and Flood Risk (Co1, Co4, Co6, Co10, Co13, Co28, Co41, Co68, Co187) are not repeated in this table. For full details on these Commitments see Section 5.		

6.3.3 Management Measures

6.3.3.1 Further to the Commitments identified in Table 11, appropriate environmental best practice will be followed to minimise impacts on watercourses and local surface water features. This will include but is not limited to: CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (Masters-Williams 2001); CIRIA C648 Control of Water Pollution from Linear Construction Projects (Murnane, Heap, and Swain 2006) and CIRIA – SuDS Manual (CIRIA 2015).

6.3.3.2 It will be ensured that any culverts are adequately sized and have sufficient capacity to avoid impounding flows and are installed below the active bed of the watercourse, ensuring that a suitable flow rate is maintained so that sediment continuity and the movement of fish and aquatic invertebrates can be maintained as in CIRIA's C786 Culverts, screen and outfall manual (CIRIA 2019). A suitable flow rate will be maintained whilst crossings are installed through the use of pumps, flumes or equivalent, so that the temporary works remain safe and operational in times of flood.

6.3.3.3 A number of management measures have been identified in the Pollution Prevention Plan (Appendix D) which are relevant to Hydrology and Flood Risk.

Outline Onshore infrastructure Drainage Strategy

6.3.3.4 An Outline Onshore Infrastructure Drainage Strategy has been developed (see F2.6: Outline Onshore Infrastructure Drainage Strategy). The Strategy will ensure that existing run-off rates to the surrounding water environment are maintained at pre-development rates.

6.3.3.5 Drainage channels will be installed on either one or both sides of the onshore ECC to ensure that direct impacts to the hydraulic regime are not altered, to be developed in consultation with the Environment Agency and LLFA/IDB as appropriate (Co19). The Onshore Infrastructure Drainage Strategy will be used alongside the most relevant PPG available at

the time (Co4). Prior to discharge to watercourses, water from temporary discharge will be passed through a treatment system such as a silt interceptor (**F2.6: Outline Onshore Infrastructure Strategy**).

6.3.3.6 Appropriate licences relating to dewatering (and abstraction if required) will be obtained from the relevant bodies (Environment Agency, LLFA, IDB). **F1.5: Consents Management Plan** includes details of other consent and licences relevant to Hornsea Four.

6.4 Ecology and Nature Conservation

6.4.1 Objective

6.4.1.1 To minimise the impact of construction works on protected species and designated sites and to minimise the loss of nature conservation features such as hedgerows and mature trees.

6.4.2 Commitments

6.4.2.1 **Table 12** details the commitments relevant to Ecology and Nature Conservation that are to be secured through the CoCP.

Table 12: Ecology and Nature Conservation Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co18	Secondary: HDD entry and exit points will be located at least 9 m away from IDB and Ordinary surface watercourses and 20m from EA surface water courses or the landward toe of the EA surface watercourse's flood defences. Where a surface watercourse is to be crossed by HDD, the onshore export cables will be installed at least 1.2 m beneath the hard bed of any watercourses and the optimal clearance depth beneath watercourses will be agreed with the relevant authorities prior to construction. Where EA flood defences are present a minimum 1.2 m vertical clearance will be maintained between the hard bed of the watercourse and the landward toe of those flood defences. Where Hornsea Four crosses sites of particular sensitivity (e.g. embanked EA watercourses, SSSIs or groundwater Inner Source Protection Zones (SPZs)) a hydrogeological risk assessment will be undertaken to inform a site specific crossing method statement which will also be agreed with the relevant authorities prior to construction.	DCO Requirement 17 (Code of construction practice)
Co26	Primary: Where hedgerows and/or trees require removal, this will be undertaken prior to topsoil removal. Sections of hedgerows and trees which are removed will be replaced using like for like hedgerow species.	DCO Requirement 17 (Code of construction practice);

Commitment ID	Measure Proposed	How the measure will be secured
Co27	Primary: Trees identified to be retained within the Onshore Crossing Schedule will be fenced off and worked around. Where works are required close to trees that will remain in situ, techniques will be used to safeguard the root protection zone.	and; DCO Requirement 10 (Ecological Management Plan)
Co33	Tertiary: All vegetation requiring removal will be undertaken outside of the bird breeding season. If this is not reasonably practicable, the vegetation requiring removal will be subject to a nesting bird check by a suitably qualified ECoW. If nesting birds are present, the vegetation will not be removed until the young have fledged or the nest failed.	
Co35	Secondary: Where required, provision will be made for badger access in relevant construction areas, when work is not taking place in order to ensure normal movements as far as reasonably possible. Provision will be made to ensure avoiding the entrapment of any animals within relevant construction areas. Checks will be made prior to the start of any works to ensure no animals are trapped. Appropriate checks will be made as required by the ECoW.	
Co65	Tertiary: A Site Waste Management Plan (SWMP) will be developed in accordance with the Outline Site Waste Management Plan, with consideration of the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co114	Tertiary: Good practice air quality management measures will be applied where human receptors reside within 350 m of works or ecological receptors are present within 200 m, 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.	
Co119	Secondary: In areas of confirmed presence, or potential for great crested newt (i.e. within 250 m of an identified great crested newt pond) appropriate exclusion fencing will be erected and working areas 'trapped out' prior to the commencement of relevant onshore construction works, in line with Great crested newt mitigation guidelines, English Nature, 2001 or the latest available relevant guidance.	DCO Requirement 17 (Code of construction practice) and; DCO Requirement 10 (Ecological Management Plan)
Co120	Secondary: Habitat manipulation will be undertaken in order to discourage reptiles from the working area(s). A qualified ecologist will undertake a search of all working areas identified as being suitable for reptiles. Any reptiles found within the working area will be relocated into suitable adjacent habitat.	
Co122	Secondary: Prior to the commencement of construction activities, pre-construction surveys will be undertaken by the Ecological Clerk of Works (ECoW) where necessary, in accordance with the	

Commitment ID	Measure Proposed	How the measure will be secured
	Outline Ecological Management Plan and latest available species specific guidance.	
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 17 (Code of construction practice)
Co157	Secondary: Fences, walls, ditches and drainage outfalls will be retained along the onshore export cable corridor and landfall, where possible. Where it is not reasonably practicable to retain them, any damage will be repaired and reinstated as soon as reasonably practical. The Environment Agency must be notified if damage occurs to any EA Main river or related flood infrastructure.	
Co170	Secondary: Joint bays and link boxes will be located a minimum of 20 m away from Environment Agency (EA) Main rivers.	
Co172	Secondary: The bed and banks of watercourses will be reinstated to their pre-construction condition following the removal of any temporary structures. Culverts will not be used for temporary access track crossings across EA Main Rivers. Where a temporary access track crossing across an EA Main River may be required, clear span/ bailey bridges will be used. There will be no loss of cross-sectional area to Environment Agency (EA) Main rivers.	
Co175	Secondary: A pre and post construction condition survey will also be undertaken at each Environment Agency (EA) Main river crossings, including any flood defences to be crossed. The scope and methodology of the survey will be agreed in advance with the EA. On completion of the project, details of the surveys under each Main River and flood defence will be submitted to the EA.	
General Commitments relevant to Ecology and Nature Conservation (Co1, Co4, Co6, Co36, Co41, Co68, Co69) are not repeated in this table. For full details on these Commitments see Section 5.		

6.4.3 Management Measures

6.4.3.1 Further details regarding management measures are provided in **F2.3: Outline Ecological Management Plan**.

General

6.4.3.2 An ECoW will be appointed by the Applicant to oversee the onshore enabling works and construction where necessary. The ECoW will be a suitably experienced professional ecologist. The ECoW will review results of protected species surveys prior to commencement of the relevant works.

6.4.3.3 It will be the responsibility of the Principal Contractor(s) to implement the following measures:

- All works will be carried out taking full account of legislative requirements and Environment Agency guidance;
- Heavy machinery will not be tracked or over stored soils; and
- Vehicle speeds will be restricted within the working corridor to reduce the likelihood of injury to species on site.

6.4.3.4 Night working is not scheduled as part of the normal construction programme and will only be undertaken in exceptional circumstances (see **Section 5.1**). Where night working is unavoidable, light fixtures will be directed away from habitat of value or otherwise notable species. Any such installations will be inspected by the ECoW for compliance.

6.4.3.5 If the pre-construction surveys identify the presence of a bat roost, the ECoW will notify the Applicant's Project Manager and Site Manager of the requirement to obtain a Natural England licence prior to the commencement of works on the tree or feature in question, or within 15 m of the tree or feature. If construction is being undertaken within 15 m of a tree or feature that has been identified as potentially supporting roosting bats, construction lighting will be designed in accordance with the Institute of Lighting Engineers (ILE) Guidance Note 8 Bats and Artificial Lighting (ILE 2018).

Biosecurity and Invasive Non-Native Species

6.4.3.6 An Outline Biosecurity Risk Assessment has been developed (**Appendix A**), which will be implemented to minimise the risk of spreading invasive non-native species. The protocol accounts for the management of any invasive non-native species that are found to be present on site and measures to limit their transference. This will be updated following pre-construction surveys that may identify such areas and instances of invasive non-native species.

6.5 Landscape and Visual

6.5.1 Objective

6.5.1.1 To ensure construction works are carried out in such a way to minimise disturbance to relevant landscapes and visual onshore receptors.

6.5.2 Commitments

6.5.2.1 **Table 13** details the commitments relevant to Landscape and Visual that are to be secured through the CoCP.

Table 13: Landscape and Visual Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co26	Primary: Where hedgerows and/or trees require removal, this will be undertaken prior to topsoil removal. Sections of hedgerows and trees which are removed will be replaced using like for like hedgerow species.	DCO Requirement 17 (Code of construction practice);
Co27	Primary: Trees identified to be retained within the Onshore Crossing Schedule will be fenced off and worked around. Where works are required close to trees that will remain in situ, techniques will be used to safeguard the root protection zone.	and; DCO Requirement 10 (Ecological Management Plan)
Co157	Secondary: Fences, walls, ditches and drainage outfalls will be retained along the onshore export cable corridor and landfall, where possible. Where it is not reasonably practicable to retain them, any damage will be repaired and reinstated as soon as reasonably practical. The Environment Agency must be notified if damage occurs to any EA Main river or related flood infrastructure.	DCO Requirement 17 (Code of construction practice)
Further general Commitments relevant to Landscape and Visual (Co1, Co10, Co28, Co68, Co69, Co187) are not repeated in this table. For full details on these Commitments see Section 5. Commitments associated with PRoWs and the English Coast Path (Co79, Co158, Co165 and Co192) are also relevant to Landscape and Visual and are not repeated in this table. For further details on these commitments see Table 15.		

6.5.3 Management Measures

6.5.3.1 An Outline Landscape Management Plan has been produced (F2.8), which will inform a detailed version to be submitted to and approved by the relevant local planning authority prior to the commencement of the relevant stage of the connection works. The detailed Landscape Management Plan will set out details of:

- surveys, assessment and method statements as guided by BS 5837;
- location, number, species, size and planting density of any proposed planting;
- cultivation, importing of materials and other operations to ensure plant establishment; and
- implementation timetables for all landscaping works.

6.5.3.2 Fences and gates that are removed or damaged during the construction works will be replaced post construction.

6.5.3.3 Good housekeeping will be maintained on all construction areas and secure storage will be provided for materials at risk from wind blow. At the OnSS stockpiles will be in defined temporary storage areas.

6.5.3.4 Appropriate lighting will be used to reduce the incidence of visual intrusion to sensitive receptors (see Section 5.4).

6.6 Historic Environment

6.6.1 Objective

6.6.1.1 To minimise the impact of construction works on buried archaeology, heritage assets and their setting.

6.6.2 Commitments

6.6.2.1 Table 14 details the commitments relevant to Historic Environment that are to be secured through the CoCP.

Table 14: Historic Environment Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co26	Primary: Where hedgerows and/or trees require removal, this will be undertaken prior to topsoil removal. Sections of hedgerows and trees which are removed will be replaced using like for like hedgerow species.	DCO Requirement 17 (Code of construction practice); and; DCO Requirement 10 (Ecological Management Plan)

Further general Commitments relevant to Historic Environment (Co28, Co69) are not repeated in this table. For full details on these Commitments see Section 5.

6.6.3 Management Measures

6.6.3.1 A programme of archaeological investigation has been undertaken (as outlined in Volume A3, Chapter 5: Historic Environment and accompanying annexes in Volume A6) to identify the presence/absence, nature, date and significance of archaeological remains within the onshore order limits. The results have informed the outline onshore archaeological WSI (F2.10) which will inform the production of a detailed onshore archaeological WSI(s), securing a programme of further archaeological investigation and mitigation measures.

6.6.3.2 In respect of specific mitigation measures of relevance to the outline CoCP, The Beverley Sanctuary Limit Stone (HP4-56) is located next to York Road. As per Co1, all main roads are

to be crossed via HDD or other trenchless technology. This will avoid any direct physical impact upon the asset, as the cables will be drilled beneath the road and beyond the location (to the south) of the Scheduled Monument. A specific Mitigation Method Statement will be produced detailing additional measures required to ensure the Beverley Sanctuary Limit Stone is suitably protected and secure during construction. The Mitigation Method Statement will also identify roles and responsibilities, working methodologies (including tool box talks), lines of communication and reporting procedures.

6.6.3.3 A wooden fence is located around the Scheduled Monument to prevent damage from current agricultural activities within the field. However additional fencing and signage identifying an exclusion zone will be erected to avoid any accidental damage to the designated heritage asset. The requirements and extent of the exclusion zone will be identified and agreed with the relevant heritage stakeholders prior to construction.

6.6.3.4 In consideration of the built heritage asset located within the landfall area (World War II defences, HP4-02 (note HP4-01 is discussed in the intertidal **Section 7.4**)), recommended mitigation options include the use of exclusion zones during construction and potentially historic building recording prior to construction works. An area around the heritage assets could be secured with HERAS fencing, along with signage identifying the exclusion zone. The requirements and location of any exclusion zones will be identified and agreed between Hornsea Four and the heritage stakeholders prior to construction.

6.6.3.5 To minimise any impact upon the Lissett Airfield concrete tracks (HP4-06) it is recommended that, should these be removed to enable construction, the concrete tracks are then reinstated once construction work is complete. A level of historic building recording prior to removal may also be appropriate.

6.7 Land Use and Agriculture

6.7.1 Objective

6.7.1.1 To protect the quality and integrity of the soil resources, and to maintain farm accesses and PRoW where possible.

6.7.2 Commitments

6.7.2.1 **Table 15** details the commitments relevant to Land Use and Agriculture that are to be secured through the CoCP.

Table 15: Land Use and Agriculture Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co8	Tertiary: Soil will be stored and managed in accordance with DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Ref PB1328) or the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co61	Secondary: Prior to the commencement of works, the contractor (or project appointed Agricultural Liaison Officer) will undertake soil condition surveys and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles. Such work will inform the reinstatement under Co10.	
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. With the exception of a section of haul road at Beck Hill (south of Gembling House, YO25 8HS) and Miles Lane (Leconfield, HU17 7RB).	
Co79	Primary: Disturbance to PRoWs will be temporary where reasonably practicable and PRoWs will be reinstated as soon as reasonably practical. A PRoW Management Plan will be developed in accordance with the Outline PRoW Management Plan. The PRoW Management Pan will include details of temporary and permanent diversions, closures, gated crossings and signage to be provided during construction.	
Co114	Tertiary: Good practice air quality management measures will be applied where human receptors reside within 350 m of works or ecological receptors are present within 200 m, 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.	
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.	
Co158	Secondary: Impacts on the English Coast Path national route will be minimised through site design considerations and phasing within working constraints for the landfall construction. In addition, Co79 will be applied to the English Coast Path national route.	
Co165	Secondary: Where Public Rights of Way (PRoWs) are required to be closed during the construction of the onshore export cable corridor and landfall 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 due to unforeseen circumstances encountered during construction, East Riding of Yorkshire Council will be informed in writing.	

Commitment ID	Measure Proposed	How the measure will be secured
Co192	Secondary: The beach at landfall will not be closed for public access during construction, unless an unforeseen and unplanned event occurs during which emergency access is required. Details will be agreed through the approval of a Code of Construction Practice (CoCP) with ERYC prior to construction of the connection works.	
Further general Commitments relevant to Land Use and Agriculture (Co10, Co68) are not repeated in this table. For full details on these Commitments see Section 5.		

6.7.3 Management Measures

Land Use

6.7.3.1 The identified types of topsoil and subsoil will be stripped and stored separately to avoid mixing of soil materials, which could reduce the overall quality of the soil. Topsoil and subsoil stockpiles will be maintained appropriately to avoid losses. Heavy machinery will not be tracked over stored soils. Tracked vehicle movements will be limited on waterlogged soils and will be subject to an assessment of ground conditions which will be undertaken on a site-by-site basis to avoid compaction and damage. Topsoil and subsoil heaps will be maintained to reduce potential losses of soil materials during the length of storages. Appropriate soil handling machinery will be used and where possible, stripping will be programmed to reduce potential soil damage from handling in unsuitable weather conditions. To enable the land to be handed back to the farmer in a suitable condition appropriate soil aftercare following reinstatement will be implemented. These measures are contained within an outline Soil Management Strategy (**Appendix B**) and will be implemented to ensure that recognised good practice is effectively implemented on site. Soil handling operations will be supervised on site.

6.7.3.2 Appropriate construction practices will be implemented to ensure that the potential risk for the spread of animal and plant diseases is reduced as far as practicable (see the outline Onshore Biosecurity Risk Assessment in **Appendix A**).

6.7.3.3 Appropriate fencing of the construction corridor will be provided per the nature of the individual farm holding affected (**Section 5.3**). Where requested to do so by the landowner, marker posts will be placed on the corner of manhole covers associated with link boxes to clearly demarcate their location.

6.7.3.4 Farm accesses will be maintained, wherever reasonably practicable, between fields within a farm holding.

6.7.3.5 Accesses across individual fields will be maintained where reasonably practicable, where these are severed during construction, through management measures or other means.

6.7.3.6 Existing water supplies and drainage systems will be maintained and reinstated wherever reasonably practicable during the construction process."

Irrigation

6.7.3.7 Details of the irrigation system on each land holding will be gathered during the pre-construction stage and irrigation plans will be developed to inform the management of agricultural land drainage during construction. The ALO will be responsible for consulting with each individual landowner to obtain the relevant information and to be a point of contact to report concerns regarding irrigation systems during construction. The plans will include the following information:

- Location of boreholes and water supplies used by each farmer;
- Irrigation or impoundment licence granted by the Environment Agency; and
- System of irrigation applied and the location of irrigation network for each field.

Agricultural Land Drainage

6.7.3.8 Information regarding drainage is included in **F2.6: Outline Onshore Infrastructure Drainage Strategy**.

6.7.3.9 Prior to construction of the relevant stage of connection works a Construction Drainage Scheme will be developed to facilitate the temporary construction works (Co14). Hornsea Four has coordinated detailed drainage surveys to establish the existing land drainage baseline environment prior to submitting an application for development consent. A suitably qualified drainage expert with experience of working in the local area has been enlisted to carry out the surveys, and to consult with landowners and occupiers. This is to ensure that local, site-specific and landowner knowledge is effectively captured.

6.7.3.10 These surveys will identify all ordinary watercourses and land drains (including agricultural ditches) to be intercepted by the onshore ECC, and will inform the pre-construction drainage scheme which will allow drainage to be maintained during construction. As such, care will be taken to ensure that land drainage is not compromised for the duration of the construction of Hornsea Four.

6.7.3.11 Particular care will be taken to ensure that the existing land drainage system is not compromised as a result of construction. Land drainage systems will be maintained during construction and reinstated on completion.

6.7.3.12 Drainage surveys have commenced within the Hornsea Four Order Limits, pre-application. The ALO (see **Table 1** for more details) will coordinate any remaining drainage surveys (where required, noting that areas will not be re-surveyed if work has already been undertaken pre-application) to establish the existing drainage position including any related farm drainage that may be affected by the scheme. The services of a suitably qualified drainage consultant will be employed to act as a drainage expert and liaise with landowners or occupiers (through the ALO) to consult on any pre and post-construction drainage schemes that might be required. This will include the design of any land drainage works required during construction, and on the design and timing of any post-construction (i.e.

operational) land drainage works required for the subsequent restoration of the land. This process will take due regard of any local and site-specific knowledge.

6.7.3.13 Subject to the consultation (identified in the paragraph above) with each landowner and occupier, existing agricultural land drains, where encountered during construction, will be appropriately marked. The location of drains cut or disturbed by the construction works will be photographed, given a unique number and logged using GPS coordinates. The actual condition and characteristics (e.g. depth of installation, pipe type and diameter) of the existing drainage will also be recorded upon excavation.

6.7.3.14 Land drainage will be installed on one or either side of the cable trenches (typically on one side, rather than on both sides, dependant on existing field drainage), within the onshore ECC working width, to intercept existing field drains and ditches to maintain the integrity of the existing field-drainage system during construction. Such measures will also assist in reducing the potential for wet areas to form during the works, thereby reducing the impact on soil structure and fertility. Drainage systems however will not be installed into areas where they are not currently present, unless otherwise agreed.

6.7.3.15 Any field drainage intercepted during the construction works will either be reinstated following the installation of the cable or diverted to a secondary channel. Landowners and occupiers will be informed of the design of any pre and post-construction (i.e. operational) land drainage works required, including: pipe layout, falls, dimensions and outfalls (if required). The drainage will be reinstated in a condition that is at least as effective as the previous condition and will follow best practice for field drainage installations taking into account site specific conditions.

6.7.3.16 Where it is reasonable for the reinstatement of drainage to involve works outside of the order limits it will be done subject to the agreement of the landowner.

6.7.3.17 Landowners and occupiers will be provided with the opportunity to inspect land drainage works as they progress, subject to health and safety considerations. Furthermore, records of any pre and post-construction (i.e. operational) land drainage installed will be maintained by the Applicant with copies provided to the Landowner and the Occupier following the completion of construction works.

Public Rights of Way

6.7.3.18 Several PRoWs will be affected by the construction of the onshore elements of Hornsea Four. Prior to any stopping up or localised diversion of PRoW, the Principal Contractor(s) will agree measures via a detailed PRoW Management Plan, in accordance with the outline PRoW Management Plan presented in **Appendix C**.

6.8 Traffic and Transport

6.8.1 Objective

6.8.1.1 To carry out construction works in such a way that maintains highway safety and avoids or minimises adverse effects on local communities and highway users.

6.8.2 Commitments

6.8.2.1 General commitments Co1 and Co36 are relevant to Traffic and Transport (see Section 5). Commitments specific to the outline CTMP are presented in Appendix F.

6.8.3 Management Measures

6.8.3.1 An outline Construction Traffic and Travel Management Plan (oCTMP) has been developed and included in Appendix F. The oCTMP contains the control measures and monitoring procedures for managing the potential traffic and transport impacts of constructing Hornsea Four. The detailed CTMP(s) will be developed in accordance with the oCTMP.

6.9 Noise and Vibration

6.9.1 Objective

6.9.1.1 To control and limit noise and vibration levels during construction, so far as is reasonably practicable, to minimise disturbance to sensitive receptors.

6.9.2 Commitments

6.9.2.1 Table 16 details the commitments relevant to Noise and Vibration that are to be secured through the CoCP.

Table 16: Noise and Vibration Commitments relevant to the CoCP

Commitment ID	Measure Proposed	How the measure will be secured
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 17 (Code of construction practice)
Further general Commitments relevant to Noise and Vibration (Co36, Co41) are not repeated in this table. For full details on these Commitments see Section 5.		

6.9.2.2 In addition, commitments secured via the oCTMP (Appendix F; Co135, Co137, Co144) and the Outline Design Plan (F2.13; Co49, Co169) and the onshore works plan (Volume D1; Annex 4.2; Co49), are relevant to construction noise and vibration.

6.9.3 Management Measures

6.9.3.1 No residential receptors are located within 50 m of Hornsea Four (Co49), and as such mitigation has been embedded into the design. Assessment undertaken pre-application has identified the majority of HDD (or other trenchless technologies) crossings along the onshore ECC will not require mitigation measures for either daytime or evening and weekend work (see **Section 5.1** for details regarding work outside of core working hours). Noise modelling has shown that all HDD crossings undertaken during daytime hours can be undertaken without any mitigation measures; however, at a crossing of the A164 (HDD ID 40, see **Volume A4, Annex 4.2: Crossing Schedule - Onshore**), noise levels are close to the threshold level and noise barriers at this location will be considered for daytime working.

6.9.3.2 For evening and weekend working, all HDD locations except for ten will be acceptable without any mitigation measures. The ten locations comprise:

- Seven HDDs (HDD IDs 14, 21, 31, 43, 63, 64,68), mitigated sufficiently through the careful placement of temporary noise barriers (2.03 m Echo sound cusions barriers used during noise modelling).
- Three HDDs (HDD IDs 68, 53, 40), due to local land conditions, the noise levels are predicted to be higher than the relevant noise limit for that time period, and the installation of a noise barrier at these locations will not reduce the noise levels sufficiently to enable evening and weekend working without significant effects occurring.
    - Crossing of private road, south of the OnSS site: HDD ID 68 – reduction of number of HDD rigs to one for evening/weekend working in addition to noise barriers;
    - Crossing of Broadgate / B1230: HDD ID 53 – increase of barrier height to 2.75 m; and
    - Crossing of the A164: HDD ID 40 – daytime working only

The site by site appraisals will be refined pre-construction if necessary (at landfall, the onshore ECC and the OnSS) to inform the detailed CoCP(s) to ascertain the requirement for the identified mitigation at each location.

6.9.3.3 Relevant good construction practice and appropriate management measures will be applied, which includes:

- Construction works will be undertaken in accordance with the best practicable means (as defined in Section 72 of the Control of Pollution Act 1974), to minimise noise and vibration effects. Noise control measures will be consistent with the recommendations of the current version of BS 5228 'Code of Practice for Noise and Vibration Control on Construction and Open Sites' - Part 1: Noise and Part 2: Vibration' (BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014);
- Informing local residents about the construction works, including the timing and duration of any particularly noisy elements, and providing a contact telephone number to them (see **Section 4.2**);
- Avoiding operating particularly noisy equipment at the beginning and end of the day;

- Keeping potentially noisy deliveries, such as skips and concrete, to the middle or less sensitive times of the day, where reasonably practicable;
- Locating noisy static plant, such as diesel generators, away from residential properties, where reasonably practicable;
- Using the most modern equipment available and ensuring equipment is properly maintained;
- Where possible, using silencers/mufflers on equipment;
- Construction site layout designed to minimise or avoid reversing with use of banksmen where appropriate. Output noise from reversing alarms set at levels for health and safety compliance;
- Use of modern, fit for purpose, well maintained plant and equipment to minimise noise generation. Where necessary, plant and vehicles will be fitted with mufflers / silencers maintained in good working order. Use of silenced equipment where possible and low impact type compressors and generators fitted with lined and sealed acoustic covers. Doors and covers housing noise emitting plant will be kept closed when machines are in use;
- No audible music or radios to be played on-site; and
- Ensuring engines are switched off when machines are idle.

6.9.3.4 In addition to the measures listed above, at locations where deemed necessary (to be determined in consultation with ERYC and identified in the detailed CoCP(s)), screening and appropriate temporary noise barriers will be used.

6.9.3.5 The following best practice measures will be applied during construction where appropriate to minimise impacts in relation to vibration:

- Choosing alternative, lower impact equipment or methods wherever possible;
- Scheduling the use of vibration-causing equipment, at the least sensitive time of day;
- Routing, operating or locating high vibration sources as far away from sensitive areas as possible;
- Sequencing operations so that vibration-causing activities do not occur simultaneously;
- Isolating the equipment causing the vibration on resilient mounts; and,
- Keeping equipment well maintained.

6.9.3.6 Site specific mitigation measures will be developed as part of the detailed CoCP(s) and agreed with the local planning authority.

6.10 Air Quality

6.10.1 Objective

6.10.1.1 To minimise the generation of dusts near sensitive receptors during construction and to facilitate community engagement and a proactive approach to complaints regarding nuisance dusts.

6.10.2 Commitments

6.10.2.1 Table 17 details the commitments relevant to Air Quality and Health that are to be secured through the CoCP.

Table 17: Air Quality and Health Commitments relevant to the CoCP.

Commitment ID	Measure Proposed	How the measure will be secured
Co114	Tertiary: Good practice air quality management measures will be applied where human receptors reside within 350 m of works or ecological receptors are present within 200 m, 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 17 (Code of construction practice)

6.10.2.2 In addition, commitments secured via the outline CTMP (Appendix F; Co135) and the onshore works plan (Volume D1; Annex 4.2; Co49, Co134) are relevant to construction air quality.

6.10.3 Management Measures

6.10.3.1 Dust mitigation management measures as detailed within IAQM guidance (IAQM 2014) will be adopted near sensitive receptors:

- Record all complaints and make the log available to the local authority when asked;
- Undertake daily on and off-site inspections and record in a log;
- Cover or fence stockpiles of dusty materials;
- Remove any dusty materials from site as soon as possible;
- Ensure vehicles turn off engines when not in use;
- Ensure plant is fitted with appropriate dust suppression methods, or use these techniques in conjunction, where practicable;
- Take measures to prevent material being tracked off-site by vehicles (e.g. road sweeper, wet sweeping methods);
- Regularly inspect haul routes and make any repairs as necessary. Record in a log; and
- A construction method statement relevant to management of dust will be submitted for approval to the relevant authority.

7 Management of Intertidal Environmental Issues.

7.1.1.1 The following sections provide outline measures in relation to the management of intertidal environmental issues during construction. For the purpose of this outline CoCP the 'intertidal area' relates to the area between MHWS and MLWS. Elements above MHWS are considered within **Section 6**.

7.1.1.2 These measures will be further developed within the detailed CoCP(s) required under Requirement 17 of the DCO. The topic areas detailed below follow the chapters within **Volume A3** of the ES.

7.1.1.3 The commitment to install the offshore export cables at landfall by HDD or other trenchless methods (Co187) is a key consideration regarding intertidal construction and associated environmental matters.

7.2 Hydrology and Flood Risk

7.2.1 Objective

7.2.1.1 To minimise the risk of surface water flooding during the construction phase, to prevent pollution of surface watercourses and to minimise the impact on local surface water features.

7.2.2 Commitments

7.2.2.1 There are currently no commitments adopted or proposed specifically in relation to intertidal hydrology and flood risk.

7.2.3 Management Measures

7.2.3.1 At the Hornsea Four intertidal area, construction measures would be adopted to maintain the existing level of flood protection during construction. These measures comprise the project commitment to install the offshore export cables at landfall by HDD or other trenchless methods (Co187), which avoids the direct impact of the project's construction on the flood defences at the intertidal area.

7.3 Intertidal Ecology

7.3.1 Objective

7.3.1.1 To minimise the impact of construction works on intertidal species and habitats.

7.3.2 Commitments

7.3.2.1 There are currently no commitments adopted or proposed specifically in relation to intertidal ecology.

7.3.3 Management Measures

7.3.3.1 Measures will be adopted to ensure the potential release of pollutants from construction activities is minimised, which will include planning for accidental spills, responding to all potential contaminant releases and including emergency contact details (e.g. Environment Agency, Natural England, JNCC, Maritime and Coastguard Agency and MMO).

7.3.3.2 In addition to the pollution prevention methods identified in **Section 5.6** and the outline Pollution Prevention Plan (**Appendix D**), the following will be adopted when working in the intertidal area:

- Only using chemicals included on the approved Centre for Environment, Fisheries and Aquaculture Science (Cefas) list under the Offshore Chemical Regulations 2002;
- A marine pollution contingency plan will be prepared as part of the Construction Project Environmental Management and Monitoring Plan (Co111).

7.4 Historic Environment

7.4.1 Objective

7.4.1.1 To minimise the impact of construction works on sediments of geoarchaeological/paleoenvironmental importance and on sites of identified archaeological significance between MHWS and MLWS.

7.4.2 Commitments

7.4.2.1 There are currently no commitments adopted or proposed specifically in relation to the historic environment.

7.4.3 Management Measures

7.4.3.1 Management measures will be developed as appropriate prior to DCO Application and included within an updated outline CoCP.

7.4.3.2 A built heritage asset is located within the intertidal area (anti-tank blocks (HP4-01), see **Volume A3, Chapter 5: Historic Environment** for more details). Recommended mitigation options include the use of exclusion zones during construction and potentially historic building recording prior to construction works. If they require moving to allow access for construction related activities, the blocks could be recorded to Historic England's Level 1 historic building recording standard and a report produced prior to the blocks being moved and stored on-site. Following construction works, the anti-tank cubes could be reinstated to their original location; the requirement and practicalities of this would be discussed in consultation with the heritage stakeholders and agreed through the approval of the Onshore WSI (Co160).

8 References

British Standards Institution (2012) 5837 Trees in relation to design, demolition and construction.

British Standards Institution (2014) 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration

CIRIA (2001) C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors. London, CIRIA.

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CIRIA (2015) C753 SuDS Manual. London, CIRIA.

CIRIA (2019) C786 Culverts, screen and outfall manual. London, CIRA

Environment Agency (2001) Piling and Penetrative Ground Improvement Methods on land Affected by Contamination: Guidance on Pollution Prevention. Bristol, Environment Agency.

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Department for Environment, Food and Rural Affairs (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (PB13298). London, DEFRA.

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Institute of Lighting Engineers (2018) Guidance Note 8 Bats and Artificial Lighting.

Appendix A – Outline Onshore Biosecurity Risk Assessment

Appendix A – Outline Onshore Biosecurity Risk Assessment

1 Introduction

1.1 Project Background

This document comprises the outline Onshore Biosecurity Risk Assessment for Hornsea Four and forms Appendix A of the outline Code of Construction Practice (oCoCP). It sets out the measures that the appointed Principal Contractor(s) will take to manage biosecurity risk associated with construction of the temporary and permanent onshore elements of Hornsea Four (landward of Mean High Water Springs (MHWS)). Details of the activities and infrastructure that comprise the project description for Hornsea Four is provided in **Volume A1, Chapter 4: Project Description**.

1.2 Purpose of the Onshore Biosecurity Risk Assessment

1.2.1.1 The purpose of the Onshore Biosecurity Risk Assessment is to set out management measures to minimise biosecurity risks, including the spreading of invasive non-native species, diseases and pathogens during construction. This assessment will be updated following pre-construction surveys that may identify areas and locations of invasive non-native species. A detailed Onshore Biosecurity Risk Assessment will be developed (to be appended to the detailed CoCP(s), secured via Requirement 17 of the draft Development Consent Order (DCO) (**Volume C1.1: Hornsea Four Draft DCO**) which will be agreed with East Riding of Yorkshire Council (ERYC) prior to commencement of the relevant stage of the connection works.

1.3 Onshore Biosecurity Risk Assessment Governance

1.3.1.1 The responsibility for ensuring that measures set out in the Onshore Biosecurity Risk Assessment are delivered rests with the Applicant and Principal Contractor(s) appointed to carry out the works and with East Riding of Yorkshire Council (ERYC) as the enforcing agency.

1.3.1.2 An Ecological Clerk of Work (ECoW) will be appointed to oversee the onshore enabling works and construction where necessary (see Section 2.3 of the oCoCP). The ECoW will be a suitably experienced professional ecologist. Appropriate measures will be adopted when working in the vicinity of invasive terrestrial plants and injurious weeds.

1.4 Onshore Biosecurity Risk Assessment Commitments

1.4.1.1 The Applicant has developed a range of Commitments to eliminate or reduce impacts and effects. All commitments identified for Hornsea Four and referenced in this outline plan are detailed within the Commitments Register (see **Volume A4, Annex 5.2: Commitments Register**).

1.5 Management measures

1.5.1 General Management Measures

1.5.1.1 To minimise the biosecurity risk, the following measures will be adhered to by all relevant staff and will be incorporated into the method statements for pre-construction surveys and construction works. The measures may be updated pre-construction if further information on construction practices becomes available. For more detailed invasive non-native species management measures see **Section 1.5.2**.

1.5.1.2 General good practice measures to be followed at all times include:

- Arrive at the construction site with clean footwear, equipment and vehicle(s);
- Before leaving the construction site and before moving from one farm to another, remove mud, plants and other materials from boots, vehicles and equipment using a stiff brush where necessary;
- Whenever practicable, park on areas of hard-standing;
- Restrict the amount of equipment taken onto site to the minimum required;
- Whenever practicable, avoid the following:
    - Areas with known plant disease (if relevant);
    - Livestock areas;
    - Contact with potentially infectious material e.g. Rhododendron, a primary host plant of Phytophthora diseases, especially when wilted/dying (i.e. showing signs of infection); and
    - Areas of known Chytridiomycosis infection, known crayfish plague and other diseases or pathogens.
- Schedule multiple site visits so that sites of greatest risk with regard to invasive non-native species, diseases or pathogens are visited at the end of the day; and
- If staff do come into contact with potentially infectious material (e.g. dead amphibians, crayfish, dying Rhododendron) staff must:
    - Make a note of findings and the location of material (take photographic records of plant material);
    - Notify the ECoW of findings as soon as practicable;
    - Dispose of or thoroughly disinfect with an appropriate disinfectant all external clothing and footwear (e.g. Virkon ® broad spectrum disinfectant (1% solution or 10g/l)*0F0F1, or Propeller™ disinfectant if addressing a Phytophthora infection); and
    - Dispose of powder-free disposable gloves appropriately in provided waste facilities.

1.5.2 Invasive non-native species

1.5.2.1 Along with the general practices outlined in **Section 1.5.1**, appropriate measures will be adopted when working in the vicinity of invasive terrestrial plants and injurious weeds. Where

necessary, works will be supervised by the ECoW. Known locations of invasive non-native species (as identified by pre-construction surveys) will be marked on site, and vehicle movements restricted in the vicinity of these locations where possible. Any spoil that is likely to contain invasive plant material will be stored separately from non-contaminated spoil and tread appropriately.

1.5.2.2 Control measures will be taken, these may include but are not limited to the 'Check, Clean and Dry' campaign or other latest available guidance:

- Check - equipment (including vehicle tyres and wheel arches) and clothing for live organisms, mud and other organic material before leaving an area - particularly in areas that are damp or hard to inspect, before moving from one watercourse or site to another;
- Clean – wash and/or disinfect equipment, footwear and clothing that might have come in to contact with water (and away from waterbodies to prevent pollutant incidents), or as otherwise necessary, when works are completed. If you do come across any organisms or material, leave them at the water body or site where you found them; and
- Dry - all equipment and clothing for as soon as possible before leaving site, to limit the transfer of invasive non-native species off site, as some species can live for many days in moist conditions.

1.5.2.3 Where appropriate, measures will also be taken against invasive non-native animal species and the relevant bodies will be notified of their location.

1.5.2.4 An outline Environmental Management Plan (oEMP) has been prepared (see **Volume F2, Chapter 3**). The oEMP includes outline measures to minimise impacts to ecological receptors. Details of construction mitigation relevant to ecology are also provided in Section 6.4 of the oCoCP.

1.5.3 When working in a waterbody:

1.5.3.1 The Onshore Biosecurity Risk Assessment will be implemented to minimise the risk of spreading invasive non-native species. The main risks are associated with the transfer of aquatic plants or animals between watercourses or waterbodies. Ponds have / will be avoided where practicable (Co78) and a number of watercourses will be crossed using HDD or other trenchless technology (Co1). However, where working in or near water, appropriate control measures will be implemented. These may include but are not limited to the 'Check, Clean and Dry' campaign (see **Section 1.5.2**) or other latest available guidance:

- All construction work will be undertaken in accordance with Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors CIRIA (C532); and CIRIA (C753) – SuDS Manual (CIRIA, 2015). The following measures will be implemented:
- No discharge to surface watercourses will occur without permission from the Environment Agency;

- Wheel washers and dust suppression measures to be used as appropriate, where necessary, to prevent the migration of pollutants;
- Regular cleaning of access roads of any construction waste and dirt to be carried out;
- Measures will be employed to intercept and treat run-off from the working corridor, for example by using sandbags, settlement tanks and lagoons. After treatment, discharge of any waters will be carried out so as to minimise physical impacts on channel morphology;
- Surface water flowing into the trenches during the construction period will be pumped via settling tanks or ponds to remove sediment and potential contaminants, before being discharged into local ditches or drains via temporary interceptor drains. Where gradients on site are significant, cable trenches will include a hydraulic brake (bentonite or natural clay seals) to reduce flow along trenches and hence reduce local erosion;
- Deep trenchless excavations and deep excavations for pile foundations to be mitigated by casing off perched groundwater units during construction works and sealing off once the casing is removed; and
- Inert bentonite or natural clay seals may be used as a drilling fluid and to seal deep excavations where there is a risk that groundwater could be compromised, thereby reducing or eliminating the pathway whereby new contaminants can enter groundwater as a result of subsurface activities.
- Clean boots (using a hard bristle brush if necessary) and disinfect (away from waterbodies to prevent potential pollutant incidents) all equipment that might come into contact with water using Virkon ® suitable for wetland habitat (1% solution or 10g/l) prior to and at the end of each site visit;
- Appropriately dispose of powder-free disposable gloves between site visits in provided waste facilities; and
- Ensure vehicle tyres and wheel arches are cleared of mud, plants and other organic material before leaving site and before moving from one farm to another. Leave removed material on site.

1.5.4 Construction

1.5.4.1 To prevent the spread of biohazards, disease or invasive non-native species, the following measures will be implemented, but not limited to:

- Topsoil stripping will take place on a dry day, when the soils have had at least 24 hours of dry weather to avoid compaction and damage to vital organisms (see **Appendix B** Outline Soil Management Strategy for further details on soil management);
- Dust mitigation measures have been provided in the oCoCP. This specifies that measures will be implemented to reduce dust generation, including covering of fencing stockpiles of dusty materials and preventing materials being tracked off-site; and
- A separation layer of geotextile will be placed on the stripped subsoils at the logistics compounds and haul roads (and any other locations which uses important stone) to prevent cross contamination between any imported stone and the subsoils.

Appendix B – Outline Soil Management Strategy

Appendix B – Outline Soil Management Strategy

1 Introduction

1.1 Project Background

1.1.1.1 This document comprises the outline soil management strategy for Hornsea Four and forms Appendix B of the Outline Code of Construction Practice (oCoCP). It sets out the measures that the appointed Principal Contractor(s) will take to manage soil resources associated with agricultural land impacted by the temporary and permanent onshore elements of Hornsea Four (landward of Mean High Water Springs (MHWS)). Details of the activities and infrastructure that comprise the project description for Hornsea Four is provided in Volume **A1, Chapter 4: Project Description**.

1.2 Purpose of the Outline Soil Management Strategy

1.2.1.1 This outline soil management strategy will inform the development of a detailed soil management strategy (to be appended to the final CoCP, secured via requirement 17 of the draft Development Consent Order (DCO) (**Volume C1.1: Hornsea Four Draft DCO**)) which will be agreed with East Riding of Yorkshire Council (ERYC) prior to commencement of the relevant stage of the connection works.

1.2.1.2 This strategy includes the consideration of the soil resources that are available within the areas affected by the permanent infrastructure for the OnSS area and permanent access track, but does not include a methodology for the stripping, storage and reuse of these materials as the land will be permanently lost from agriculture. An assessment of permanent land take has been undertaken in **Volume A3, Chapter 6: Land Use and Agriculture** of the Environmental Statement (ES). If the OnSS areas were to be restored to agriculture at the end of the operational and maintenance phase, the soil resource information would be available to guide the decommissioning plan.

1.2.1.3 The outline soil management strategy is based on recognised best practice guidance provided in the Department for Environment, Food and Rural Affairs (Defra) Code for the Sustainable Use of Soils on Construction Site (Defra 2009) and the Ministry of Agriculture, Fisheries and Food (MAFF) MAFF Soil Handling Guide (MAFF 2000). It is acknowledged that the MAFF Soil Handling Guide is currently being updated. The latest available guidance will be incorporated into the final strategy.

1.2.1.4 The principle objectives of the strategy are to:

- Conserve soil resources;
- Avoid damage to soil structure;
- Maintain soil drainage during construction; and
- Identify principles for the reinstatement of the soil profile following construction.

1.3 Soil Management Strategy Governance

1.3.1.1 The responsibility for ensuring that measures set out in the detailed soil management strategy are delivered rests with the Principal Contractor(s) and agricultural liaison officer (ALO) appointed as part of the detailed CoCP(s) to carry out the works; with ERYC as the enforcing agency.

1.3.1.2 This soil management strategy will be a living document. During the detailed design stage, the strategy will be developed to include seeding arrangements (if required) and the results of further soil surveys. As it forms part of the CoCP, the final soil management strategy will be agreed with ERYC and will be implemented prior to the commencement of the relevant stage of the connection works relating to the onshore elements of Hornsea Four on agricultural land.

1.4 Structure

1.4.1.1 This Outline Soil Management Strategy adheres to the following structure:

- **Section 2** – outlines the delivery of the soil management process;
- **Section 3** – outlines the further work required to implement the soil management strategy and proposals for the management of the soil during the construction period;
- **Section 4** – proposals for soil stripping;
- **Section 5** – proposals for soil storage;
- **Section 6** – proposals for ground preparation and soil replacement;
- **Section 7** – soil handling conditions; and
- **Section 8** – cultivation and initial aftercare.

1.5 Construction Sequencing

1.5.1.1 In respect to the construction works, stripping of the topsoil within the onshore ECC will likely take place early in the construction, usually just prior to haul road installation, whilst subsoil would only be excavated and stored as construction of each linear section of the onshore ECC advances (see **Section 4**). As a result, the subsoil would be stored for a short period of time before being replaced (see **Section 6**), whilst the topsoil may be stored for a longer period, which could comprise the full duration of the onshore ECC construction period. Regardless of storage duration, the topsoil and subsoil handled during the construction works would be stored and handled in accordance with the measures set out within this outline soil management strategy (see **Section 5**) to minimise impacts on land use and soils.

1.5.1.2 Once cable installation and testing is complete, the following activities would be carried out prior to topsoil reinstatement: reinstatement of PRoWs; removal of fencing; installation of post-construction drainage and removal of any temporary haul/access roads. Following this, additional reinstatement works would be undertaken, including the replacement of topsoil (see **Section 6**) and implementation of aftercare provisions (see **Section 8**).

1.5.1.3 The construction sequencing is subject to factors such as the duration of the activity, weather restrictions (particularly in relation to soil movement works), seasonal restrictions

and permissions. It should also be noted that the activities can be undertaken concurrently at multiple sections along the onshore ECC which may influence sequencing. As such, the sequencing described above should be considered indicative.

1.5.1.4 As further details on construction sequencing become available pre-construction, these will inform the development of the detailed soil management strategy to be submitted and approved as part of the final CoCP (see Table 1 of the **Outline CoCP**).

1.6 Soil Management Commitments

1.6.1.1 The Applicant has developed a range of Commitments to eliminate or reduce impacts and effects. All Commitments identified for Hornsea Four are detailed within the Commitments Register (see **Volume A4, Annex 5.2: Commitments Register**).

1.6.1.2 The Commitments Register includes a number of commitments relevant to soil management. Commitments of most relevance to this outline soil management strategy are listed in **Table 1**.

Table 1: Outline Soil Management Plan Commitments.

Commitments ID	Measure Proposed	How the measure will be secured
Co8	Tertiary: Soil will be stored and managed in accordance with DEFRA Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Ref PB1328) or the latest relevant available guidance.	DCO Requirement 17 (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 17 (CoCP) DCO Requirement 20 (Restoration of land used temporarily for construction)
Co61	Secondary: Prior to the commencement of works, the contractor (or project appointed Agricultural Liaison Officer) will undertake soil condition surveys and intrusive soil survey trial pits to identify and describe the physical and nutrient characteristics of the existing soil profiles. Such work will inform the reinstatement under Co10.	DCO Requirement 17 (CoCP)
Co64	Tertiary: Topsoil and subsoil will be stored in separate stockpiles in line with DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298 or the latest relevant available guidance. Any suspected or confirmed contaminated soils will be appropriately separated, contained and tested before removal (if required).	DCO Requirement 17 (CoCP) DCO Requirement 14 (Contaminated land and groundwater scheme)

Commitments ID	Measure Proposed	How the measure will be secured
Co197	Secondary: Where reasonably practicable, topsoil & subsoil stockpiling within the floodplain (defined as areas of Flood Zone 2 or 3 as identified on the Environment Agency Flood Map for Planning) of any EA Main River will be avoided at the Onshore Substation.	DCO Requirement 17 (CoCP)

2 Management of Soil Handling Process

2.1.1.1 The following supervision measures relevant to soil management and handling of soils will be undertaken:

- A person will be responsible on-site for soil management and appropriate resources will be provided by the Principal Contractor(s) to supervise soil management throughout the construction period (in accordance with Defra 2009);
- Liaison with landowners and their agents undertaken during the preparation of the DCO application will continue throughout the construction period (via the ALO) to maintain consistent dialog;
- A soil specialist will be appointed by the Principal Contractor(s) (as part of the ALO role or in addition) to monitor soil handling during construction; and
- A programme of monitoring and reporting will be implemented to ensure soil handling processes are being appropriately implemented, with additional visits during the initial soil strip and store of soil materials.

3 Baseline Conditions – Soil Resources

3.1 Pre-construction Soil Survey

3.1.1.1 It is noted that pre-application survey work has been undertaken and the soil physical characteristics during pre-construction will remain broadly consistent into the construction phase in respect of soil descriptions and in such instances it will be unnecessary to re-survey land. It is therefore considered that this survey work undertaken pre-application is satisfactory for record of condition purposes. Any pre-construction detailed soil survey work that is considered necessary (where pre-application surveys work has not been undertaken previously) will be undertaken by a competent person (e.g. a soil scientist) (Co61) in order to produce specific soil resource topsoil and subsoil unit plans and restoration specifications for areas of agricultural land within individual land holdings that will be occupied by Hornsea Four connection works. These surveys will form the basis of the pre-construction condition assessments of the land prior to soil stripping operations and will be used to monitor the progress of soil handling and restoration operations.

3.1.1.2 The survey work will include the identification of the physical characteristics of profiles at a standard density of 100 m intervals (with additional profiles examined where the 100 m grid sampling does not enable a suitable density of sampling in an agricultural enclosure that will otherwise be missed). Soil pits will also be examined at appropriate locations to provide

additional detail on soil structure and stoniness. The survey will provide information on the following soil physical characteristics:

- Soil horizon depths for topsoil and subsoil horizons;
- Soil textures of all horizons;
- Soil colour;
- Stone contents, estimated from augering, confirmed by soil pit excavation/ and or sample analysis;
- Presence and characteristics of mottling, a soil wetness indicator;
- Presence of manganese concretions, a soil wetness indicator;
- Identification of gleyed horizons;
- Identification of slowly permeable layers; and
- Identification of impenetrable rock layers.

3.1.1.3 Record of Condition will be undertaken and will include the following:

- Existing crop regimes;
- The position and condition of existing field boundaries;
- The condition of existing access arrangements;
- The location and type of existing private water supplies;
- The yield of crops;
- The quality of grazing land; and
- The existing weed burden.

3.1.1.4 Photographs will be included in the record of condition and will be provided to the landowner and occupier prior to entry to the landholding, if requested.

4 Soil Stripping

4.1.1.1 Soil stripping will be required in areas that will temporarily support the construction of the onshore elements of Hornsea Four. The areas where soil stripping will be required are:

- Temporary logistics compounds (including the Landfall Compound, Primary and Secondary onshore ECC compounds, and temporary works area associated with the OnSS and EBI);
- Temporary access roads; and
- Temporary and permanent works associated with the construction of the onshore ECC.

4.2 Topsoil Strip

4.2.1.1 For each of the areas identified above in **Section 4**, the depths of different topsoil units will be identified, based on the survey of soil resources outlined in **Section 3.1**. Where soil types

and topographic conditions are suitable, compounds may be established without soil stripping with geotextile and stone laid directly over the in-situ topsoil.

4.2.1.2 In areas across the Hornsea Four footprint identified for topsoil storage only, underlying in-situ topsoils will not need to be stripped from the footprint of the topsoil stores.

4.2.1.3 Where topsoils are stripped best practice guidance and methods will be followed (such as the MAFF Soil Handling Guide (MAFF 2000), or the latest available guidance. This is anticipated to follow one of the following best practice methods:

- Sheet 1 – Excavators and Dump Trucks; or
- Sheet 13 – Bulldozers and Dump Trucks.

4.2.1.4 The initial topsoil strip will be subject to monitoring to ensure that the handling method (MAFF 2000) is implemented correctly. Haul routes to and from the stripping zones will be clear and established in advance, to ensure that excessive trafficking of subsoils is reduced.

4.3 Subsoil strip

4.3.1.1 For the length of the onshore ECC, the depths of subsoil units will be identified based on the survey of soil resources as described in **Section 3.1**. Stripping of subsoil resources along the length of the onshore ECC will be limited to the construction of the cable trenches (up to six trenches), Horizontal Directional Drilling (HDD) entry/exit pits at crossing locations, joint bays and link boxes.

4.3.1.2 The requirement to strip more than one subsoil horizon in some sections is dependent on the requirement for the Agricultural Land Classification (ALC) grading to be maintained within the restored soil profile.

4.3.1.3 Where subsoil horizons can be stripped together, with no reduction in ALC when restored, these will be stripped in a single operation, applying best practice guidance in MAFF Soil Handling Sheet 1 (MAFF 2000) (or the latest available guidance).

4.3.1.4 Where the thicknesses and characteristics of upper and lower subsoil horizons determine the quality of the land, these will be stripped and stored separately alongside the cable trench in order to reduce the potential for the loss of land quality, as far as reasonably practicable.

5 Soil Storage

5.1.1.1 Soil storage will be undertaken for the following components of Hornsea Four:

- Logistics compounds (including the landfall compound and temporary works area associated with the OnSS and EBI) - soils will be moved directly from the area being stripped to areas that have been identified as topsoil and subsoil (where required) storage locations;

- Onshore ECC – topsoil stored either side of the permanent cable corridor, within the Hornsea Four Order Limits, and stripped subsoil horizons stored separately alongside the cable trenches; and
- Temporary access tracks – topsoil stored alongside the access roads.

5.1.1.2 Soil will be stored and managed in accordance with Defra Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Defra 2009) or the latest available guidance (Co8). The method of storage mound construction will be in accordance with that described for a single tier mound in Sheet 2 (Building Soil Storage Mounds with Excavators and Dump Trucks) of the Good Practice Guide for Handling Soils (MAFF 2000), or the latest available guidance.

5.1.1.3 It is essential that the locations of soil storage mounds are planned in advance to ensure that the potential for damage to the soil storage mounds and/or contamination of the mounds with foreign construction materials is limited, as far as possible. Soil storage mounds will be located away from surface watercourses where reasonably practical, and measures to control runoff will be implemented as set out in the detailed CoCP(s). All storage mounds intended to remain in situ for more than six months or over the winter period will be seeded (unless otherwise requested by the landowner or occupier) with weed control and other necessary maintenance (e.g. mowing and reseeding) carried out as discussed and agreed with landowners and agents.

5.1.1.4 Topsoil and subsoil stockpiling associated with the OnSS will avoid the floodplain (defined as areas of Flood Zone 2 and 3, as identified on the Environment Agency Flood Map for Planning) of any Environment Agency Main River, where reasonably practical (Co197). Topsoil and subsoil stockpiling associated with the onshore ECC will not avoid the floodplain due to the large area of land associated with Flood Zone 2 and 3; however, in some circumstances, opportunities may be explored to leave gaps in stockpiles to allow water flow across the floodplain, if feasible.

5.1.1.5 Materials from individual topsoil and subsoil units and within individual land holdings will be stored separately.

5.1.1.6 If material is stored in a groundwater Source Protection Zone, it will be necessary to determine whether this poses an additional contamination risk. If it could pose a risk, then the material should be checked, covered and bunded for storage.

6 Ground Preparation and Soil Replacement

6.1 Loosening operations

6.1.1.1 Following the removal of all construction materials (including temporary access road surface material e.g. aggregate and geotextile matting) and prior to the replacement of stripped soil materials, loosening of the underlying soil will be undertaken. Loosening will be focused on those areas that have been stripped and where the underling subsoils may have

become compacted. Soil loosening will be undertaken using a wing tined cultivator to ensure the compaction is broken up prior to the replacement of topsoil horizons.

6.1.1.2 The depth to which the loosening will be required will depend on the nature of soil type and the extent of any compaction that may have occurred. The depth and location of any underdrainage will also be taken into account. The depth of the loosening will be assessed on site, prior to the works being undertaken.

6.2 Soil replacement

6.2.1.1 Post-construction, the working area will be reinstated to pre-existing condition as far as reasonably practical in line with Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra 2009), or latest relevant available guidance (Co10).

6.2.1.2 Following loosening operations, the topsoils will then be replaced on the logistics compounds in accordance with the appropriate method from the MAFF Soil Handling Guide (MAFF 2000) or latest available guidance. This will follow one of the subsequent best practice methods:

- Sheet 4 – Excavators and Dump Trucks; or
- Sheet 15– Bulldozers and Dump Trucks.

6.2.1.3 The replacement of the topsoils across the logistics compounds will be subject to on-site monitoring to ensure that the handling method is implemented correctly.

6.2.1.4 These methods enable the topsoils to be replaced without trafficking over the newly loosened subsoil material, as far as possible. Haul routes to and from the soil storage mounds to the replacement areas will be clearly identified to reduce excessive trafficking of subsoils, as far as possible.

6.2.1.5 The methods for the replacement of topsoil materials along the onshore ECC will be similar to those described for the logistics compounds.

6.2.1.6 For the subsoil horizon(s) stored alongside the cable trenches (and HDD entry/exit pits, joint bays and link boxes) for a short period of time, where more than one subsoil horizon has been stripped, the subsoil materials will be replaced (loose tipped) by excavator in sequence, with lower subsoils replaced first and then overlain by upper subsoils.

7 Soil Handling

7.1.1.1 Soil handling will cease if the ground is covered in snow or there is ponding of water on the surface. Soil handling operations will be curtailed or suspended under the following conditions:

- In light rain or drizzle soil handling may continue for up to four hours unless the soils are already in too moist a state (determined by professional judgement of the Principal Contractor(s) / Site Management / appointed soil specialist / ALO (dependant on availability)); or
- In sustained heavy rain, soil handling should cease and not restart until soil consistency criteria can be met (determined by professional judgement of the Principal Contractor(s) / Site Management / appointed soil specialist / ALO (dependant on availability)).

8 Aftercare – Cultivations

8.1.1.1 The restoration of soils will be assessed against the baseline schedule of soil condition taken pre-construction (or established pre-application, as identified in **Section 3**). The reinstated soils will be cultivated to enable the initial aftercare crop to be established. The cultivations required will vary according to soil type, site and weather conditions at the time but could include the use of plough, power harrow and roll. In addition, stone picking may also be required where excessive stone volumes have become incorporated in reinstated topsoil areas.

8.1.1.2 The specified cultivations will be subject to discussion with the landowner prior to implementation.

8.1.1.3 The reinstatement and aftercare period will be agreed with individual landowners during the Heads of Terms process.

9 References

Department of Food and Rural Affairs (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. London, Defra.

Ministry of Agriculture, Fisheries and Food (2000) MAFF Soil Handling Guide. Available online: https://webarchive.nationalarchives.gov.uk/20090317221756/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm [Accessed: 15 June 2020].

Appendix C – Outline Public Right of Way Management Plan

Appendix C – Outline Public Right of Way Management Plan

1 Introduction

1.1 Project background

1.1.1.1 This document comprises the outline Public Right of Way Management Plan for Hornsea Four and forms Appendix C of the outline Code of Construction Practice (oCoCP). It sets out the proposed principles, approaches and commitments to managing the Public Right of Way (PRoW) network within the Hornsea Four Order Limits and identifies the further monitoring measures that will be undertaken to ensure all implemented measures are appropriate and successful. Details of the activities and infrastructure that comprise the project description for Hornsea Four is provided in **Volume A1, Chapter 4: Project Description**. The location of the onshore Hornsea Four Order Limits is illustrated on **Figure 1**.

1.1.1.2 There are 36 locations where the Hornsea Four Order Limits intersect PRoWs, as identified within **Volume A4, Chapter 4: Annex 2 Onshore Crossing Schedule**, discussed in **Volume A3, Chapter 6: Land Use and Agriculture**, set out in **Table 4** (of this document) and shown in **Volume D1, Annex 7.1: Public Rights of Way Plan**. The PRoWs that have been identified include a number of marked routes (i.e. the Minster Way, Beaver Trail, Rail Trail, Beverley Twenty (part of the East Riding Heritage Way) long distance trails, National Cycle Routes 1, 66 and 164), the future alignment of the England Coast Path as well as public bridleways and footpaths. These PRoWs are located at the landfall, at various points along the onshore export cable corridor (ECC), within the onshore substation (OnSS) and 400 kV National Grid Electricity Transmission (NGET) connection area.

1.1.1.3 This Outline PRoW Management Plan also supports the assessment and conclusions provided in **Volume A3, Chapter 6: Land Use and Agriculture**. All PRoWs that interact with Hornsea Four are provided in **Volume A4, Annex 4.2: Onshore Crossing Schedule**.

1.2 Purpose of the Outline PRoW Management Plan

1.2.1.1 This Outline PRoW Management Plan will inform the development of a detailed PRoW Management Plan (to be appended to the final CoCP(s), secured via requirement 17 (Code of Construction Practice (CoCP)) of the draft Development Consent Order (DCO)) (**Volume C1.1: Draft DCO including draft DML**) which will be agreed with East Riding of Yorkshire Council (ERYC) prior to the construction of the connection works, and will include details on the measures set out in this document that require confirmation in relation to impact avoidance, permanent, long-term and short-term measures to ensure minimal disturbance to PRoW users and maintenance of appropriate safety standards.

1.2.1.2 The purpose of this Outline PRoW Management Plan is to characterise the PRoWs that will be impacted by the construction, and operation and maintenance (relevant to permanent diversions) phases of Hornsea Four as well as setting out the principles to be employed in constructing and managing the impacts on PRoWs and their users. Further information on

the permanent diversions of PRoW required has been presented, along with indicative diversion routes.

1.2.1.3 As per Commitment 127 (**Volume A4, Annex 5.2 Commitments Register**) (as secured via requirement 24 of the draft DCO, **Volume C1, Chapter 1 Draft DCO including draft DML**), an Onshore Decommissioning Plan will be developed by the Applicant, or their successor, and approved by ERYC prior to the decommissioning of Hornsea Four. This plan will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure and details relevant to ground disturbance (amongst others) and will be in line with the latest relevant available guidance. No further consideration is therefore provided in this document in relation to the decommissioning phase.

1.3 PRoW Management Plan Governance

1.3.1.1 The responsibility for ensuring that measures set out in the detailed PRoW Management Plan are delivered rests with the Principal Contractor appointed to carry out the works; with ERYC as the enforcing agency.

1.4 Structure

1.4.1.1 This Outline PRoW Management Plan adheres to the following structure:

- **Section 2** – Characterisation of PRoWs, Impacts and Management Measures;
- **Section 3** – Impact Avoidance;
- **Section 4** – Long-Term and Permanent Measures
- **Section 5** – Wider PRoW Network Connectivity; and
- **Section 6** – Short-Term and Temporary Measures.

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Barmston

Lissett

Foston on
the Wolds

Brigham

Rotsea

Scorborough

Leconfield

Cherry
Burton

Bishop
Burton

Beverley

Woodmansey

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Date: 15/07/2021

Author: 303273

Name: HOW04RH0132_HornseaFourOnshoreOrderLimits

Hornsea Four

Figure 1

Hornsea Four Onshore Order Limits

Order Limits

Coordinate system: British National Grid

Scale@A3: 1:140,000

0 2 4 6 Kilometres

0 2 4 Miles

REV	REMARK	DATE
	First Issue for DCO	15/07/2021

Title: Hornsea Four Onshore Order Limits
Document no: HOW04RH0132
Created by: AZ
Checked by: MS
Approved by: PS

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2 Characterisation of PRoWs, Impacts and Management Measures

2.1 PRoW Characterisation

2.1.1.1 As stated in **Paragraph 1.1.1.2,** 36 PRoW crossing points have been identified within the Hornsea Four Order Limits, thereby requiring characterisation and management measures to be developed. These comprise 23 existing footpaths, one future footpath (England Coast Path), eight bridleways, three cycle path crossings and the Beverley Twenty (part of the East Riding Heritage Way) which is not designated as a footpath or bridleway.

2.1.1.2 The information presented in this section has drawn on the findings obtained mainly through a desk-based data collection exercises to inform both the Preliminary Environmental Information Report (PEIR) and the Environmental Statement (ES). The definitive PRoW map was obtained from ERYC and walkover surveys of specific PRoWs were undertaken in September and October 2019.

2.1.1.3 Walkover surveys of the PRoW routes that cross the Hornsea Four Order Limits were undertaken on the 4th and 30th September 2019 and the 1st October 2019. However, since this time there have been refinements made to the Hornsea Four Order Limits (see **Volume A1, Chapter 3: Site Selection and Consideration of Alternatives)** and several changes to PRoW crossings have resulted. Therefore, surveys have only been undertaken at 33 of the 36 PRoW crossings to date, a coverage of 91.6%. However, the remaining three (8.4%) PRoW crossings will be surveyed prior to the commencement of construction of the relevant part of the connection works; the findings of all surveys will be used to inform the detailed PRoW Management Plan.

2.1.1.4 During the development of the detailed PRoW Management Plan, any updates to the wider PRoW network as a result of permanently diverted paths (e.g. due to other development activity) will be incorporated into the management plan.

2.2 PRoW Commitments

2.2.1.1 The Applicant has developed a range of Commitments to eliminate or reduce the impacts and effects. All Commitments identified for Hornsea Four are detailed within the Commitments Register (see **Volume A4, Annex 5.2: Commitments Register**). Additionally, commitments identified relating to Land Use and Agriculture (including PRoWs) are presented in **Volume A3, Chapter 6: Land Use and Agriculture**.

2.2.1.2 The Commitments Register includes a number of commitments relevant to PRoWs relating to aspects such as the reinstatement of onshore working areas (specifically Co10, Co68 and Co61) and the securing of working sites with appropriate fencing (Co43). Commitments secured via this outline PRoW Management Plan (via the outline CoCP (oCoCP)) are listed in **Table 1**.

Table 1: Outline PRoW Commitments.

Commitments ID	Measure Proposed	How the measure will be secured
Co79	Primary: Disturbance to PRoWs will be temporary where reasonably practicable and PRoWs will be reinstated as soon as reasonably practical. A PRoW Management Plan will be developed in accordance with the Outline PRoW Management Plan. The PRoW Management Pan will include details of temporary and permanent diversions, closures, gated crossings and signage to be provided during construction.	DCO Requirement 17 (Code of construction practice)
Co158	Secondary: Impacts on the English Coast Path national route will be minimised through site design considerations and phasing within working constraints for the landfall construction. In addition, Co79 will be applied to the English Coast Path national route.	
Co165	Secondary: Where Public Rights of Way (PRoWs) are required to be closed during the construction of the onshore export cable corridor and landfall 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 due to unforeseen circumstances encountered during construction, East Riding of Yorkshire Council will be informed in writing.	

2.3 Management Measures Characterisation

2.3.1.1 Table 2 details the different actions required by Hornsea Four for PRoWs where they intersect the Hornsea Four Order Limits crossings. The actions include short and long-term temporary stopping up of PRoWs and permanent diversions.

Table 2: Definitions of the actions required by Hornsea Four to address impacts to PRoW.

Management Measure	Definition
No Management Required	In some cases where PRoWs are crossed by the Onshore ECC only, public access to the PRoW will be maintained through the use of trenchless techniques and therefore no management measures are required. Trenchless techniques include Horizontal Directional Drilling (HDD), which allows ducts to be installed under the PRoW without breaking open the ground and digging a trench. It is acknowledged however that haul road crossings may still impact such crossings (where haul road crossings are relevant) and as such short-term stopping up and management measures may be required on all such PRoWs).
Short-Term Temporary Stopping-Up	The PRoW will require short-term periods of stopping-up within the construction phase (as per Co165), when construction activities are taking place nearby. As discussed with ERYC at a meeting on 29th October 2019, no diversions will be put in place in these instances due to the low level of use and short-term nature of stoppages (ON-HUM-3.7).

Management Measure	Definition
	Short-Term in this case relates to a period no longer than three months at one any one time, or six months in total over the whole construction period.
Long-Term Temporary Stopping-Up	The PRoW will require stopping-up during periods within the construction phase. Long-Term in this case relates to a period longer than three months at one any one time, or six months in total over the whole construction period.
Permanent Diversion	The PRoW will require stopping-up for the entirety of the construction period (36 months) and will be permanently impacted during the operation and maintenance phase of Hornsea Four. A permanent diversion of the PRoW will be provided to maintain public access to the wider PRoW network. Further detail on the proposed diversions has been provided within Section 4.

2.3.1.2 Table 3 identifies a range of further management measures that have been identified, to be implemented during construction by the Principal Contractor to reduce impact to PRoWs and the wider PRoW network.

Table 3: Definitions of the management measures required to address impacts to PRoW.

Management Measure	Definition
Measures to Avoid Long-Term Impacts	In some locations where PRoWs cross long-term temporary structures/project elements (i.e. temporary access track, logistics compounds), avoidance of long-term stopping-up can be achieved through the use of management measures such as control measures on temporary access tracks, and secured through appropriate fencing and signage. Public access to the wider PRoW network will be maintained, outside of short-term stopping-up, such as the construction of the access tracks. Short-Term in this case relates to a period no longer than three months at one any one time, or six months in total over the whole construction period.
Short-Term Temporary Diversion to be Investigated Further	It has been identified that a temporary diversion of the PRoW should be provided, where feasible, to maintain public access to the wider PRoW network during construction activities. Should investigations conclude there is no viable and safe diversion route available, this will be clearly communicated to PRoWs users. Further details on the required communications for the stoppage of PRoWs has been provided within Section 6.15.2.2. Short-Term in this case relates to a period no longer than three months at one any one time, or six months in total over the whole construction period.
Long-Term Temporary Diversion	A diversion of the PRoW will be provided to maintain public access to the wider PRoW network at this location.

Management Measure	Definition
	Long-Term in this case relates to a period longer than three months at one any one time, or six months in total over the whole construction period.
None Required	The requirement for further management measures has not been identified due to the low level of impact identified for the PRoW crossing. A low level of impact could be concluded as a result of the following: 1. Public access to the PRoW will be maintained through the use of trenchless techniques and so there will be no impact on the PRoW. 2. The PRoW is subject to relatively low usage and it has been concluded, in consultation with ERYC (ON-HUM-3.7), that no further measures are required due to the short term temporary nature of the impact.

2.4 Characterisation Outcome

2.4.1.1 A meeting to discuss impacts on the PRoW network and to seek agreement in principle of their management was held with ERYC on 29th October 2019. Specifically, this meeting discussed the potential impacts on discrete PRoWs, the requirements for stopping-up and/or diversions, as well as signage principles to be included in the Outline PRoW Management Plan (ON-HUM-3.7) .

2.4.1.2 **Table 4** details the PRoWs that will be impacted by Hornsea Four, the actions required to address the impact and any management measure(s) that could be implemented at each location. Figures showing the PRoW that will be impacted are provided in **Volume D1, Annex 7.1: Public Rights of Way Plan** with all crossings set out in **Volume A4, Annex 4.2: Onshore Crossing Schedule**.

Table 4: Characterisation of the identified PRoW routes, the impact associated and the management measures to be implemented.

PRoW Name	Crossing Schedule Reference	Description	Stopping Up Required? (refer to Table 1)	Management Measure Required? (refer to Table 2)
Barmston Footpath No.4	LF_PW_005	Footpath within landfall compound area.	Yes. Long-Term Temporary Stopping-Up	Long-Term Temporary Diversion.
Barmston Footpath No. 3	ECC_PW_012	Marked path crossing mid-field. Ploughed at time of site visit so no path visible.	Yes. Short-Term Temporary Stopping-Up	None Required.
Barmston Footpath No. 2	ECC_PW_014	Footpath	Yes. Short-Term Temporary Stopping-Up	None Required.
Foston on the Wolds Footpath No. 10	ECC_PW_058	Concrete access track with hedgerows either side. No clear signage or signs of use of footpath identified.	Yes. Short-Term Temporary Stopping-Up	None Required.
Foston on the Wolds Footpath No.12	ECC_PW_094	Grassy field boundary, maintained route clearly marked. Access gained through a gate from the road.	Yes. Short-Term Temporary Stopping-Up	Consultation with ERYC and agreement of management method (temporary diversion requirement if feasible) to be undertaken pre-construction.
Foston on the Wolds Footpath No. 12	ECC_PW_099	Raised grassy field boundary next to river. Marked footpath. Well used for fishing, with rope access from path to river.	No management required (HDD)	None Required.
Foston on the Wolds Bridleway No. 6	ECC_PW_136	Maintained farm access track between fields. Exposed hard packed mud.	Yes. Short-Term Temporary Stopping-Up	None Required.
Hutton Cranswick Footpath No. 10	ECC_PW_150	Non-maintained grassy field boundary. Not clearly marked. Bridge to cross field drain.	Yes. Short-Term Temporary Stopping-Up	None Required.
Watton Footpath No. 18	ECC_PW_153	Grassy verge next to river / drain, overlooking farm access track. No	Yes. Short-Term Temporary Stopping-Up	None Required.

PRoW Name	Crossing Schedule Reference	Description	Stopping Up Required? (refer to Table 1)	Management Measure Required? (refer to Table 2)
		signage provided and no obvious path outside of access track.		
Watton Bridleway No. 13	ECC_PW_165	Wide farm access track, maintained pathway with markings. Grassy field margin.	Yes. Short-Term Temporary Stopping-Up	None Required.
Beswick Bridleway No. 23	ECC_PW_191	Field margin, grassy and maintained but no sign of heavy use. Not marked.	Yes. Short-Term Temporary Stopping-Up	Consultation with ERYC and agreement of management method (temporary diversion requirement if feasible) to be undertaken pre-construction.
Lockington Footpath No. 8	ECC_PW_543	Footpath through field, marked at field entrance, but ploughing so no clear path.	Yes. Short-Term Temporary Stopping-Up	None Required.
Leconfield Footpath No.1	ECC_PW_217	Maintained field boundary edge, single footpath. Part of the Minster Way.	Yes. Short-Term Temporary Stopping-Up	Short-Term Temporary Diversion to be investigated further (if feasible).
Leconfield Bridleway No. 2	ECC_PW_219	Path maintained through field, clearly marked. Part of the Humberside County Council Circular Walk (discontinued route).	Yes. Short-Term Temporary Stopping-Up	Short-Term Temporary Diversion to be investigated further (if feasible).
Leconfield Footpath No. 7	ECC_PW_224	Field boundary - grassy, marked, maintained.	Yes. Short-Term Temporary Stopping-Up	Short-Term Temporary Diversion to be investigated further.
Leconfield Footpath No. 7	ECC_PW_225	Field boundary - grassy, marked, maintained.	Yes. Short-Term Temporary Stopping-Up	Short-Term Temporary Diversion to be investigated further (if feasible).
Leconfield Bridleway No. 9	ECC_PW_229	Single track tarmac farm access.	Yes. Short-Term Temporary Stopping-Up	None Required.
Leconfield Footpath No. 10	ECC_PW_232	Path through field, ploughed so no obvious path visible. Crossing mid-field.	Yes. Short-Term Temporary Stopping-Up	None Required.

PRoW Name	Crossing Schedule Reference	Description	Stopping Up Required? (refer to Table 1)	Management Measure Required? (refer to Table 2)
Leconfield Footpath No. 11	ECC_PW_233	Path through field, ploughed so no obvious path visible. Crossing mid-field.	Yes. Short-Term Temporary Stopping-Up	None Required.
Leconfield Footpath No. 10	ECC_ACC_PW_443	Path through field, ploughed so no obvious path visible. Crossing mid-field.	Yes. Short-Term Temporary Stopping-Up	Measures to Avoid Long-Term Impacts.
Leconfield Bridleway No. 6	ECC_AW_PW_605	Single track farm access.	Yes. Short-Term Temporary Stopping-Up	Measures to Avoid Long-Term Impacts.
Leconfield Bridleway No. 12	ECC_PW_236	No obvious access point, path through field, ploughed so no obvious path visible. Crossing mid-field.	Yes. Short-Term Temporary Stopping-Up	None Required.
Cherry Burton Footpath No. 2	ECC_PW_257	Maintained and marked trail – hard substrate, single track. Part of the 'Rail Trail'.	No management required (HDD)	None Required.
Cherry Burton Footpath No. 3	ECC_PW_265	Maintained grassy field boundary, access to path marked and via maintained stairs down bank but very overgrown at time of visit (crouching required by users).	Yes. Short-Term Temporary Stopping-Up	Consultation with ERYC and agreement of management method (temporary diversion requirement if feasible) to be undertaken pre-construction.
Sustrans National Route 1 and 66	ECC_PW_272	National Cycle Network. Single tarmac lane adjacent to road with shared pedestrian access.	No management required (HDD) (Management measures required due to haul road crossing)	None Required.
Sustrans National Route 164	ECC_PW_305	National Cycle Network. Single tarmac lane adjacent to road with shared pedestrian access.	No management required (HDD) (Management measures required due to haul road crossing)	None Required.
Walkington Footpath No. 9 (Moor Lane)	ECC_PW_318	Wide grassy farm track, with evidence of tractor use for field access. At crossing point track changes to overgrown single grassy path. Route part of the Beaver Trail (long distance running route) and the	Yes. Short-Term Temporary Stopping-Up	Short-Term Temporary Diversion to be investigated further (If feasible).

PRoW Name	Crossing Schedule Reference	Description	Stopping Up Required? (refer to Table 1)	Management Measure Required? (refer to Table 2)
		Beverley Twenty (East Yorkshire LDWA).		
Beverley Twenty (part of the East Riding Heritage Way (LDWR))	ECC_PW_547	Marked Route	No management required (HDD)	None Required.
Rowley Footpath No. 12	ECC_PW_507	Footpath	Yes. Short-Term Temporary Stopping-Up	None Required.
Skidby Footpath No. 16	ECC_PW_468	Grassy field boundary.	Yes. Short-Term Temporary Stopping-Up	None Required.
Skidby Footpath No. 17	ECC_PW_546	Farm access track, loose stone.	Yes. Short-Term Temporary Stopping-Up	None Required.
Skidby Footpath No. 16	SS_PW_363	Grassy field boundary.	Yes. Permanent Diversion	Permanent Diversion.
Rowley Footpath No.12	ECC/SS_ACC_PW_459	Footpath	Yes. Short-Term Temporary Stopping-Up	Measures to Avoid Long-Term Impacts.
Rowley Bridleway No. 13	ECC/SS_ACC_PW_457	Bridleway	Yes. Permanent Diversion	Permanent Diversion.
Sustrans National Route 1		National Cycle Network. Single tarmac lane, shared usage with vehicular access to Creyke Beck Substation and other industrial premises.	No management required (HDD)	None Required.
England Coast Path	LF_A4_PW_606	Future footpath	No management required (HDD)	None Required.

3 Measures to Avoid Long-Term Impacts

3.1.1.1 As identified in **Table 4** the following three PRoWs will require Short-Term Temporary Stopping-Up with Measures to Avoid Long-Term Impacts. Details are to be agreed with ERYC and contained within the detailed PRoW Management Plan, as stated in **Section 1.2**.

3.2 Leconfield Footpath No. 10

3.2.1.1 Leconfield Footpath No. 10 crosses a temporary access track within the onshore ECC area of the Hornsea Four Order Limits approximately 0.5 km north-west of Leconfield (see **Figure 2**).

3.2.1.2 During the initial construction period at the location of the relevant part of the connection works, management measures will be the same as those described in **Section 6: Short-Term and Temporary Measures**. The stopping up period will be no longer than three months at one any one time, or six months in total over the whole construction period.

3.2.1.3 Impact avoidance measures will be implemented at this PRoW crossing to ensure the PRoW route remains open to public access, without requiring a diversion, outside of the initial construction period for the access road to the logistics compound, approximately 0.5 km north-west of Leconfield (which will be no longer than three months). However, it should be noted this PRoW crosses the Onshore ECC within the same field and so will be temporarily stopped up over short-term period throughout construction (**Table 4**).

3.2.1.4 Management and safety measures will be implemented through the use of appropriate fencing and signage to maintain access along the existing PRoW route.

3.3 Leconfield Bridleway No. 6

3.3.1.1 Leconfield Bridleway No. 6 crosses a temporary access track within the onshore ECC area of the Hornsea Four Order Limits approximately 0.5 km north-west of Leconfield (see **Figure 2**).

3.3.1.2 During the initial construction period at the location of the relevant part of the connection works, management measures will be the same as those described in **Section 6: Short-Term and Temporary Measures**. The stopping up period will be no longer than three months at one any one time, or six months in total over the whole construction period.

3.3.1.3 Impact avoidance measures will be implemented at this PRoW crossing to ensure the PRoW route remains open to public access, without requiring a diversion, outside of the initial construction period for the access road to the logistics compound (which will be no longer than three months). Within this period, the PRoW will only be stopped up during the construction of the access road (i.e. not the construction of the logistics compound)), and during those periods when construction vehicle movements will be high.

3.3.1.4 Management and safety measures will be implemented through the use of appropriate fencing and signage to maintain access along the existing PRoW route.

3.4 Rowley Footpath No. 12

3.4.1.1 Rowley Footpath No. 12 crosses the cable route near to the western edge of the OnSS area of the Hornsea Four Order Limits (see **Figure 3**).

3.4.1.2 The cable route will require the PRoW be stopped-up for short-term periods within the construction phase (as per Co165) when construction activities are taking place nearby. This will be undertaken within the measures set out in **Section 6: Short-Term and Temporary Measures** .

3.4.1.3 However, impact avoidance measures are required to be implemented at the western end of this PRoW, where the PRoW meets the access track (currently a tarmac path) (see **Figure 3**). These measures will ensure the PRoW route remains open to public access, without requiring a diversion, outside of the initial construction period for the access track (no longer than three months).

3.4.1.4 During the initial construction period, management measures will be the same as those described in **Section 5: Short-Term and Temporary Measures**.

3.4.1.5 Management measures will be implemented through the use of appropriate gates, fencing and signage to maintain access to the western end of the existing PRoW route.

3.4.1.6 Additionally, users of the existing tarmac path (currently used by cyclists) will be considered in the design of the Hornsea Four temporary access track. The design of the access track will be agreed with ERYC, along with necessary management measures. Furthermore, once the Jocks Lodge Highways Improvement Scheme has been constructed, it is noted that the management measures will differ – correspondence with ERYC and agreement of the detailed PRoW Management Plan will account for either option, once construction timings are known in greater detail.

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Leconfield Bridleway No.6
Leconfield Footpath No.10
Leconfield Bridleway No.12

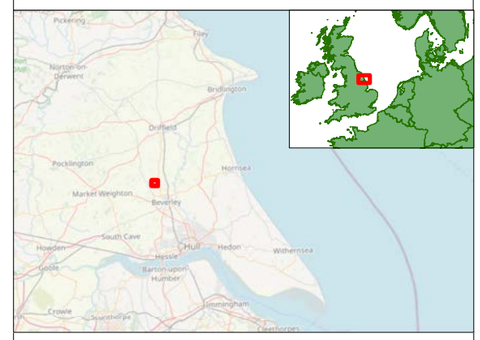
Date: 15/07/2021 Author: 303273 Name: HOW04RH0133_LeconfieldFoothpathNo10andBridlewayNo12

Hornsea Four

Figure 2

Leconfield Footpath No.10, Leconfield Bridleway No.12 and Leconfield Bridleway No. 6 in relation to Hornsea Four Order Limits

- Order Limits
- Temporary Access Track
- Logistics Compound
- Public Right of Way



Coordinate system: British National Grid
Scale@A3: 1:5,000

0 100 200 Metres

0 100 200 300 Yards

REV	REMARK	DATE
	First Issue for DCO	15/07/2021

Title: Leconfield Footpath No.10 and Bridleway No.12
Document no: HOW04RH0133
Created by: AZ
Checked by: MS
Approved by: PS

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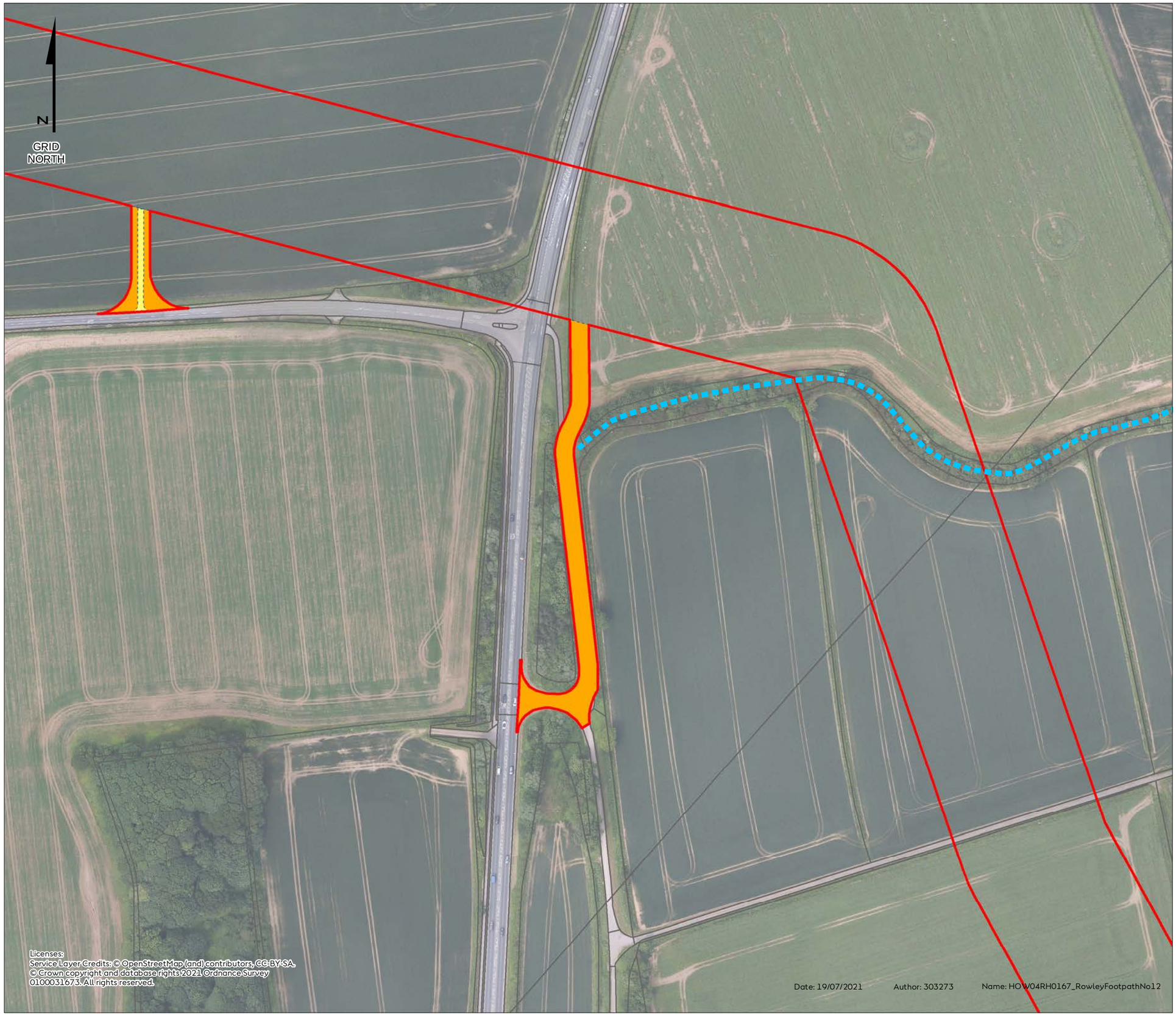
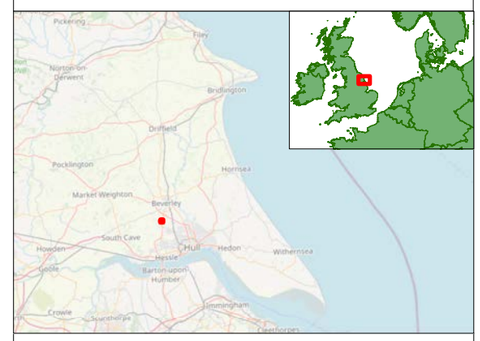


Hornsea Four

Figure 3

Rowley Footpath No.12 in relation to Hornsea Four Order Limits

- Order Limits
- Operational Access Tracks
- Temporary Access Track
- Public Right of Way



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0 20 40 60 80 100 Yards

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	First Issue for DCO	19/07/2021

Title: Rowley Footpath No.12
Document no: HOW04RH0167
Created by: AZ
Checked by: MS
Approved by: PS

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4 Long-Term and Permanent Measures

4.1.1.1 The following three PRoWs will be subject to either long-term or permanent diversions and information is provided on the long-term temporary stopping-up required. Indicative routes have been presented to illustrate the potential diversion route as well as a description of any appropriate management measures that will be implemented. The required diversions and the indicative routes have been discussed and agreed with ERYC and other relevant stakeholders.

4.1.1.2 Further details, including the final diversion routes, will be agreed with ERYC pre-construction of the connection works and contained within the detailed PRoW Management Plan, as per **Section 1.2**.

4.2 Barmston Footpath No. 4

4.2.1.1 Barmston Footpath No. 4 crosses the landfall compound area in a south to north direction, before turning to the east to run alongside the northern boundary of the landfall compound area to Fraisthorpe Beach (see **Figure 4**).

4.2.1.2 Given the importance of this PRoW to maintain coastal access in this area, a diversion will be put into place over the entirety of the construction period (approximately 32 months at landfall), to ensure the PRoW route remains open and that coastal access is maintained outside of the initial construction period for the landfall compound (i.e. no longer than three months). An indicative diversion route is provided in **Figure 4** and is anticipated to align with the approved English coast oath route, once completed.

4.2.1.3 During the initial construction period, management measures will be the same as those described in **Section 6: Short-Term and Temporary Measures** if necessary, as will those measures for reinstatement of the route once works have completed at this location.

4.2.1.4 Diversion design and implementation will be the same as those described in **Section 6: Short-Term and Temporary Measures**. These measures will be implemented through the use of appropriate gates, fencing and signage. The design of any gates required, and width of the diversion, is expected to be between 2 m and 4 m, with consideration for requirements for existing PRoW users.

4.3 Skidby Footpath No. 16

4.3.1.1 Skidby Footpath No. 16 crosses the permanent works areas of the OnSS area of the Hornsea Four Order Limits in a north-east to south-west direction (see **Figure 5**). Skidby Footpath No. 16 will be stopped up for the entirety of the construction phase.

4.3.1.2 Given the permanent disruption to this PRoW a permanent diversion will be put into place to ensure the PRoW route remains open to public access during the operation period of Hornsea Four. The indicative diversion area is shown in **Figure 5**. This area provides the flexibility to provide a diversion along or adjacent to the OnSS access road to the west (dependant on detailed design), currently considered to be the more feasible solution. It also

allows for the opportunity to divert the PRoW to the same exit point from the OnSS site; however this is subject to the detailed design of the OnSS and the location of the final above ground infrastructure. During detailed design the diversion will be incorporated into landscaping.

4.3.1.3 Diversion design and implementation has been incorporated into the design of the Outline Landscape Management Plan (**Volume F2, Chapter 8: Outline Landscape Management Plan**), where mitigation has been identified in the form of woodland and hedge planting to help screen or filter views and integrate the OnSS in to the landscape. However, the design of the PRoW will be based on those measures described in **Section 6: Short-Term and Temporary Measures**. These measures will be implemented through the use of appropriate gates, fencing and signage. The design of any gates required, and width of the diversion is expected to be 2 m, with consideration for requirements for existing PRoW users.

4.4 Rowley Bridleway No. 13

4.4.1.1 Rowley Bridleway No. 13 crosses the permanent access track to the OnSS in an east to west direction (see **Figure 6**). Rowley Bridleway No. 13 will be stopped up during the construction period, to allow for the construction of the permanent access track (no longer than three months at a time, or six months in total).

4.4.1.2 Given the permanent disruption to this PRoW a permanent diversion will be put into place to ensure the PRoW route remains open for public access after the completion of the construction of the permanent OnSS access track. An indicative diversion route is provided in **Figure 6**. The diversion will be located to the south of the permanent access road. The diversion will not be located on the access road itself to accord with requirements for equestrian users. The diversion has been incorporated into the access design for Hornsea Four.

4.4.1.3 During the initial construction period for the permanent OnSS access track (which will be approximately three months), management measures will be the same as those described in **Section 6: Short-Term and Temporary Measures**. Within this period, the PRoW will only be stopped up during the construction of the permanent OnSS access track, and during those periods when construction vehicles movements will be high or abnormal indivisible loads (AILs) are operating.

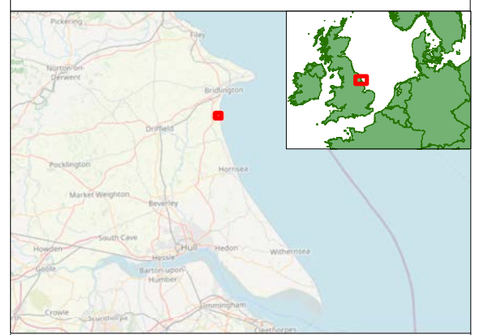
4.4.1.4 Diversions design and implementation will be the same as those described in **Section 6: Short-Term and Temporary Measures**. These measures will be implemented through the use of appropriate gates, fencing and signage. The design of any gates required, and width of the diversion is expected to be 4 m, with consideration for requirements for existing PRoW users.

Hornsea Four

Figure 4

Barmston Footpath 4 Long Term Diversion Route

- Order Limits
- OM Access
- Temporary Access Track
- Temporary Access Track and Onshore Export Cable Corridor
- Landfall Compound Areas
- Landfall Connection Works
- Public Right of Way
- Public Right of Way Long Term Diversion Route
- Indicative Area for Public Right of Way Diversion
- England Coastal Path Indicative Zone



Coordinate system: British National Grid

Scale@A3: 1:5,000

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REV	REMARK	DATE
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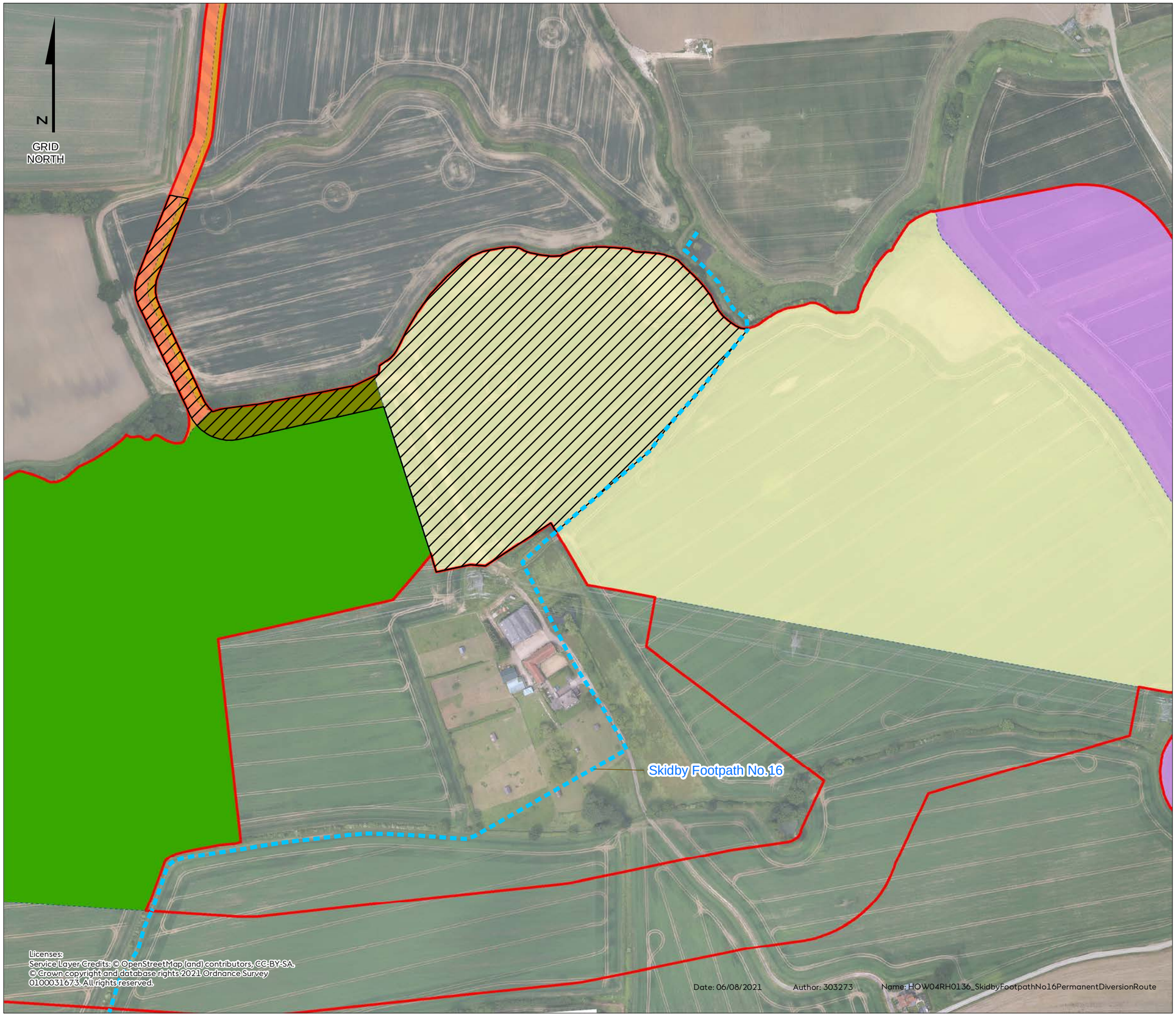
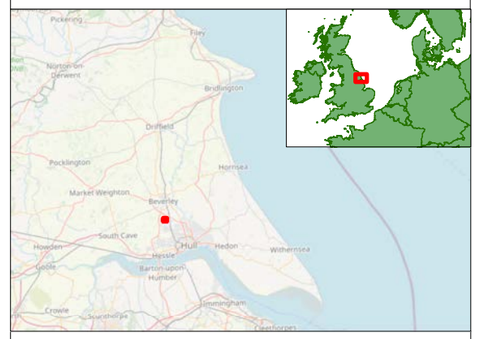
Hornsea Four

Figure 5

Skidby Footpath No. 16 Permanent Diversion Route



- Order Limits
- OM Access
- Permanent Access Track
- Temporary and Permanent Access Track
- Temporary Access Track
- 400 kV NGET Connection Area
- Onshore Substation (Permanent Space)
- Onshore Substation (Temporary Works)
- Public Right of Way
- Skidby Diversion Area



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Scale@A3: 1:3,000

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0 50 100 150 Yards

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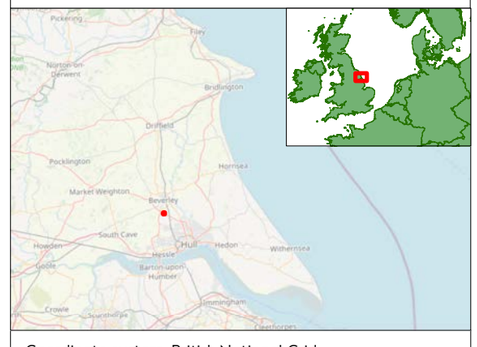
Hornsea Four

Figure 6

Rowley Bridleway No. 13 Permanent Diversion Route

- Order Limits
- Temporary and Permanent Access Track
- Temporary Access Track
- Public Right of Way
- Public Right of Way Permanent Diversion Route



Coordinate system: British National Grid

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0 25 50 75 Yards

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Title: Rowley Bridleway No. 13
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5 Wider PRoW Network Connectivity

5.1.1.1 The detailed PRoW Management Plan will include further consideration of the wider PRoW network and will detail PRoW management measures in relation to the scheduling of works. This will be completed in consultation with ERYC to limit the impact to the wider PRoW network where possible.

5.2 OnSS PRoW Network Connectivity

5.2.1.1 Within the construction period, there will be both instances of short-term temporary stopping up of a number of PRoWs surrounding the OnSS as well as the permanent stoppage of Skidby Footpath 16.

5.2.1.2 Due to the complicated network of PRoWs surrounding the OnSS, the impact of the stopping up of these PRoWs has been reviewed to ensure no long-term impact to the wider PRoW network at the OnSS throughout the construction period.

5.2.1.3 Figure 7 shows the wider PRoW network surrounding the OnSS and categorises the PRoWs in relation to availability to the wider PRoW network during the construction period of Hornsea Four. The categories are as follows:

- Green: PRoWs will remain unaffected during the construction period;
- Amber: PRoWs will be stopped up over short term periods within the construction period;
- Red: PRoWs will be stopped up for the entirety of the construction period.

5.2.1.4 It is noted that as the development of the area surrounding the existing NGET substation at Creyke Beck continues, there may be a need to further collaborate on the PRoW network with ERYC. These discussions will be held during the development of the detailed PRoW Management Plan.

5.2.2 North / south connectivity

5.2.2.1 The permanent stoppage of Skidby Footpath No. 16 creates a block for north / south connectivity across the OnSS area.

5.2.2.2 However, the existing PRoWs, Woodmansey Bridleway No. 6, Skidby Bridleway No. 7, Skidby Footpath No. 11, Skidby Footpath No. 10, as well as Sustrans National Route 1, will all remain unaffected during the construction and operation of Hornsea Four and so will maintain a network of north / south routes in the vicinity of the OnSS.

5.2.3 East / west connectivity

5.2.3.1 The permanent stoppage of Skidby Footpath No. 16 will reduce the number of possible east / west connections available in the vicinity of the OnSS.

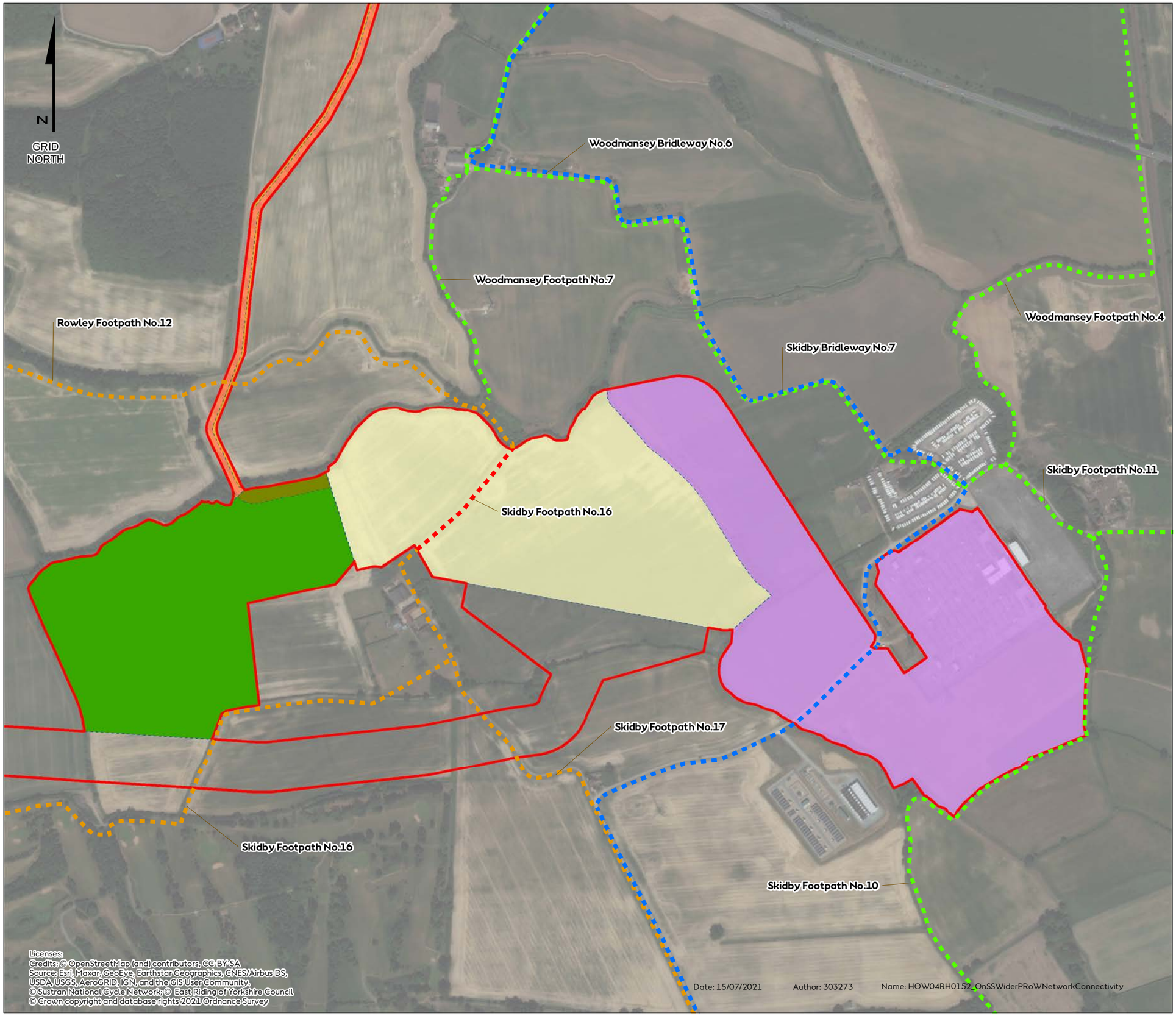
5.2.3.2 An alternative east / west route will continue to be present through the use of Rowley Footpath No. 12, Woodmansey Footpath No. 7, Woodmansey Bridleway No. 6 and Skidby

Bridleway No. 7 to the north of the OnSS. The Rowley Footpath No.12 section of this alternative route will be temporarily stopped up during the initial construction period for the permanent OnSS access track as well as the construction of the temporary access tracks at the western end of the route (which will be no longer than three months).

5.2.3.3 A further alternative route will be present through the use of Skidby Footpath No. 16, up to the permanent OnSS, and continuing on Skidby Footpath No. 17 to Sustrans National Route 1. Both of the PRoWs will be temporarily stopped up during the construction period as they are crossed by the Onshore ECC.

5.2.3.4 Whilst both alternative routes may be temporarily stopped up during construction, the main periods requiring stopping will be undertaken during different construction periods. Rowley Bridleway No. 12 will be stopped up during the initial three month construction period for the permanent access route, whilst Skidby Footpath No. 16 and Skidby Footpath No. 17 will be primarily stopped up during cable installation. Therefore, during the majority of the construction period either of the alternative east / west routes will be available maintaining PRoW network connectivity for the majority of construction period.

5.2.3.5 The alternative routes noted in **Section 5.2.2** and **Section 5.2.3** will be advertised in line with the management measures set out in **Section 6: Short-Term and Temporary Measures**, to ensure that the alternative routes are advertised appropriately.



Hornsea Four

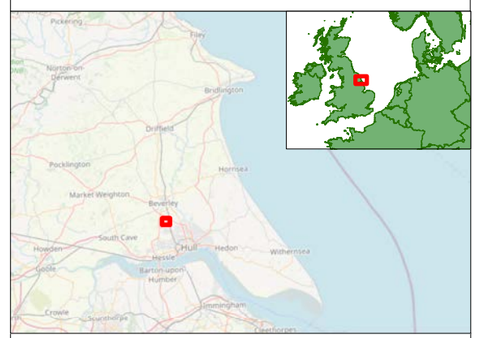
Figure 7

OnSS Wider PRoW Network Connectivity

- Order Limits
- OM Access
- Permanent Access Track
- Temporary and Permanent Access Track
- Temporary Access Track
- 400 kV NGET Connection Area
- Onshore Substation (Permanent Space)
- Onshore Substation (Temporary Works)

Public Right of Way

- Permanent network impacts through construction
- Short-term network impacts through construction
- PRoW unaffected by Hornsea Four
- Cycle route unaffected by Hornsea Four



Coordinate system: British National Grid

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6 Short-Term and Temporary Measures

6.1 Prior to the construction of the connection works

6.1.1.1 The following short-term and temporary measures will be consulted on with ERYC and specified within the detailed PRoW Management Plan, as stated in **Section 1.2**.

6.1.1.2 Prior to any temporary stopping up or localised diversion of a PRoW, the Principal Contractor will undertake works in accordance with the measures established within the detailed PRoW Management Plan, to manage the interface between the works, the PRoW and its users in consultation with ERYC.

6.1.1.3 A communication plan will be developed as part of the oCoCP to ensure ERYC are kept informed of when and where works will be taking place.

6.1.1.4 A pre- and post-construction survey, including identification of surface condition and PRoW furniture (such as signage and fencing), of each PRoW affected will be undertaken prior to the commencement of the connection works. PRoW surveys will be undertaken by a surveyor with scope of coverage and methodology to be agreed with ERYC. A qualified Agricultural Liaison Officer will be employed to ensure that information on existing land conditions is obtained, recorded and verified during the rights of way surveys.

6.1.1.5 Appropriate media (signage/leaflets/notices) will be used to inform local residents, Parish Councils and user groups of temporary changes to the PRoW network arising from the onshore construction works for Hornsea Four. Warning notices will be erected at key points where PRoW would be affected by the onshore construction activities to make users aware of the construction working area. Appropriate local media, as agreed with ERYC (such as a local newspaper), would also carry such information.

6.1.1.6 ERYC and relevant Parish Councils would be notified in advance (4 – 6 weeks) of temporary stopping-up of PRoW. A notice describing the temporary stoppage would be advertised two weeks in advance of the stoppage.

6.2 Construction Phase

6.2.1.1 Each PRoW that crosses (and remains open) along the onshore ECC will be risk assessed to ensure safety for all PRoW users using the PRoW crossing while the crossing is open during the construction phase. The assessments will take into consideration the requirement to manage risks arising from the intersection of the PRoW and the haul road (taking into account type and volume of users) during construction hours and maintaining security integrity out of hours. Where a PRoW crosses the cable route, lockable gates will be installed within the site fencing for the period of time in which the PRoW is closed. In addition, the Principal Contractor will ensure that all employees have undergone necessary health and safety training.

6.2.1.2 Where a PRoW crosses an onshore working area the Principal Contractor is to seek to maintain pedestrian access outside of periods of construction within the immediate area and

in so far as practicable. This route will be maintained by fencing and the use of gating, to ensure that the users of the access route have a safe route to cross the ECC. Any requirements for fencing and gating will be agreed in consultation ERYC pre-construction of the connection works and will include considerations of PRoW users. The width of the crossing point will depend on its usage but, where practicable, is expected to be between 2 m and 4 m, with greater width in place for bridleways and byways.

6.2.1.3 Where a PRoW runs along the side of a construction access road, management measures will be put in place during construction. These will involve fencing to separate PRoW users from construction traffic. The access points will be constructed in line with ERYC requirements and any relevant appropriate standards.

6.2.2 Construction

6.2.2.1 Should pedestrian access not be possible the Principal Contractor is to:

- Temporarily close the section of PRoW: and
- For those PRoWs identified as benefitting from a short-term diversion where feasible (as outlined in **Table 4**), provide a localised diversion (based on diversion length, landowner requirements), including appropriate signage as per details set out in the detailed PRoW Management Plan.

6.2.2.2 The Principal Contractor will advertise all alternative routes following ERYC's standards for advertising temporary stopping-up of PRoW. This will include:

- Provision of a map showing the extent of the temporary stoppage and an alternative route;
- Confirmation that the alternative route is to another PRoW or roads or on land in the developer's control; and
- Confirmation that the alternative route across land in the developer's control is safe and fit for public use.

6.2.2.3 Advanced site notices (i.e. notices to members of the public warning of stoppages ahead) would be posted at appropriate places to minimise likelihood of trespass at obstruction and unnecessary aborted journeys:

- These site notices would be erected in visible locations on site 1 – 2 weeks in advance of temporary stoppage; and
- The above notices would describe the duration of temporary stoppage and the alternative route proposed.

6.2.2.4 Where an alternative route is reasonably available, with the agreement of the relevant ERYC Officer and subject to landowner agreement, a short term permissive temporary diversion will be formed around the active construction area. Advanced warning notices will be provided to users identifying the diversion route. The width of the diversion routes is

expected to be between 2 m and 4 m, with greater width in place for bridleways and byways as well as consideration for requirements for existing PRoW users.

6.2.2.5 When identifying potential diversion routes, the following aspects will be taken into consideration:

- Identification of other nearby features that would need to be crossed by any diversion such as roads, rivers and field drains which may preclude a practicable diversion;
- The potential for any diversion to utilise a nearby PRoW crossing point, which may not be closed at the same time as the one under consideration (notably any nearby location where trenchless techniques may be used, thus avoiding any trenching/open cut stoppage requirement); and
- Potential for a diversion using a safe route avoiding putting pedestrians/walkers (and horses and cyclists for bridleways/cycle routes) on to the road network and considering suitable access requirements for all users of the PRoW.

6.2.2.6 During construction periods where any open trench cannot be reinstated immediately or where the ground surface is uneven, the Principal Contractor will consider what measures, taking into consideration local constraints, need to be implemented to ensure suitable and safe egress of users of the PRoW. Any extensions to stoppage of a PRoW would be discussed and agreed with ERYC, with relevant updates of appropriate management documents and any required advertising.

6.2.2.7 Following completion of construction activities, all public access within the working area will be reinstated to a standard commensurate to that existing prior to the commencement of construction works or an improved condition. The Agriculture Liaison Officer will act as the point of contact for the restoration of the PRoW between the developer, landowner, ERYC and Principal Contractor to ensure the PRoW reinstatement is in accordance with the agreed requirements and specification.

Appendix D – Outline Pollution Prevention Plan

Appendix D – Outline Pollution Prevention Plan

1 Introduction

1.1 Project Background

1.1.1.1 This document comprises the outline Pollution Prevention Plan for Hornsea Four and forms Appendix D of the outline Code of Construction Practice (oCoCP). It sets out the measures that the appointed Principal Contractor will take to manage Pollution Prevention associated with construction of the temporary and permanent onshore elements of Hornsea Four (landward of Mean Low Water Springs (MLWS)). Details of the activities and infrastructure that comprise the project description for Hornsea Four is provided in **Volume A1, Chapter 4: Project Description**.

1.2 Purpose of the Pollution Prevention Plan

1.2.1.1 This outline Pollution Prevention Plan will inform the development of a detailed Pollution Plan (to be appended to the final CoCP, secured via Requirement 17 of the draft Development Consent Order (DCO) (**Volume C1.1: Hornsea Four Draft DCO**)) which will be agreed with East Riding of Yorkshire Council (ERYC) (and if necessary, the Marine Management Organisation (MMO) in relation to authorised works seaward of Mean High Water Spring (MHWS)) prior to commencement of the relevant stage of the connection works.

1.2.1.2 The purpose of the Pollution Prevention Plan is to present pro-active management measures where there may be risk of pollution as a result of onshore and intertidal construction activities, and to ensure that any pollution that may occur is minimised, controlled, remediated and reported to the relevant parties as soon as reasonably practical.

1.2.1.3 The Pollution Prevention Plan strategy follows relevant good practice guidance as detailed within the Environment Agency's Pollution Prevention Guidance (PPG), including:

- PPG01 – General guide to the prevention of water pollution;
- PPG05 – Works near or liable to affect watercourses;
- PPG06 – Working at construction and demolition sites;
- PPG08 – Storage and disposal of used oils; and
- PPG 21 – Pollution incident response planning.

1.2.1.4 The Pollution Prevention Plan also draws on guidance for construction sites from:

- CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (Masters-Williams 2001);
- CIRIA C648 Control of Water Pollution from Linear Construction Projects (Murnane, Heap, and Swain 2006).
- CIRIA C753 – SuDS Manual (CIRIA 2015).

1.2.1.5 The principle objectives of the strategy are to:

- **identify** the potential sources and risks of pollution from onshore and intertidal construction activities;
- take proactive steps to prevent pollution and protect key areas (surface water environment and groundwater);
- present **control measures** to ensure that if any pollution should occur it is minimised; and
- outline a **remediation strategy** in the event of an incident of pollution.

1.3 Pollution Prevention Plan Governance

1.3.1.1 The responsibility for ensuring that measures set out in the Pollution Prevention Plan strategy are delivered rests with the Applicant and Principal Contractor(s) appointed to carry out the works and with ERYC as the enforcing agency.

1.3.1.2 Drainage works will be constructed to relevant statutory guidance and approved by the Lead Local Flood Authority (LLFA) prior to the commencement of the relevant stage of the connection works. Consultation with the Environment Agency and Natural England will be ongoing throughout the construction period to promote best practice and to implement proposed mitigation measures.

1.4 Accompanying Plans

1.4.1.1 In this outline Pollution Prevention Plan, an Emergency Response and Pollution Control Plan is referred to (see **Section 2.2**) which will be developed as part of the detailed CoCP(s). It will set out details of the containment of fuels, oils, lubricants and chemicals; measures to protect surface and groundwater during construction; and emergency procedures in cases of spillages or leaks during construction. **Volume F2, Chapter 6: Outline Onshore Infrastructure Drainage Strategy** also provides information regarding the emergency flood and evacuation plan.

1.4.1.2 The outline Bentonite Breakout Plan will also be referenced within this document (see **Section 5**). The detailed Bentonite Breakout Plan will be developed in accordance with the outline plan as part of the detailed CoCP(s) and will describe the procedure and measures for managing a bentonite breakout as a result of Horizontal Directional Drilling (HDD) or use of other trenchless technologies to cross a watercourse and will be completed upon appointment of a Principle Contractor(s).

1.5 Structure

1.5.1.1 This outline Pollution Prevention Plan adheres to the following structure:

- **Section 2** – Outline strategy of pollution prevention at the construction sites onshore, and in the intertidal area;
- **Section 3** – Measures for protection of surface water environment during construction;
- **Section 4** – Measures for the protection of groundwater;
- **Section 5** – Bentonite break out plan; and
- **Section 6** – Management of spillages.

1.6 Pollution Prevention Commitments

1.6.1.1 The Applicant has developed a range of Commitments to eliminate or reduce impacts and effects. All Commitments identified for Hornsea Four are detailed within the Commitments Register (see **Volume A4, Annex 5.2: Commitments Register**).

1.6.1.2 Commitments of most relevance to this outline Pollution prevention strategy are listed in **Table 1**.

Table 1: Outline Pollution Prevention Plan Commitments.

Commitments ID	Measure Proposed	How the measure will be secured
Co4	Tertiary: A Pollution Prevention Plan (PPP) will be developed in accordance with the outline PPP and will include details of emergency spill procedures. Good practice guidance detailed in the Environment Agency's Pollution Prevention Guidance (PPG) notes (including PPG01, PPG05, PPG08 and PPG21) will be followed where appropriate, or the latest relevant available guidance.	DCO Requirement 17 (Code of construction practice)
Co6	Tertiary: During construction of piled foundations, the following guidance will be used: Piling and Penetrative Ground Improvement Methods on land Affected by Contamination: Guidance on Pollution Prevention (Environment Agency, 2001), or latest relevant available guidance.	
Co13	Tertiary: Where cable trenching or road widening of the construction accesses is required across perched or near-surface secondary A or B aquifers, measures will be implemented to protect groundwater quality. These will be detailed within the Pollution Prevention Plan (PPP) (Co4). Additionally, in such areas, thermally insulated cables will be used to minimise effects on groundwater temperature). Furthermore, measures to ensure that the cable trench does not become a conduit for groundwater flow will also be implemented. All such measures will be identified following consultation with the Environment Agency and will be reported within the CoCP (Co124) and in line with the requirements of Section 23-25 of the Land Drainage Act 1991, or the latest relevant available guidance.	

2 Onshore construction and intertidal sites

2.1 General site layout and good housekeeping

2.1.1.1 Layout plans of the construction areas showing sensitive areas and protective buffer zones (e.g. ecological habitats or protected species), will be prepared as part of the detailed CoCP(s), showing areas where storage of potential pollutants (e.g. fuels, oils and other chemicals) will be avoided. Further details of the management of construction on site and the good housekeeping policy can be found in Section 5 of the oCoCP.

2.2 Emergency planning and procedures

2.2.1.1 Emergency and pollution procedures will be developed by the Principal Contractor(s) for the intertidal and onshore elements of Hornsea Four which will take into account the anticipated hazards and conditions at each work site. Such procedures will be documented in an Emergency Response and Pollution Control Plan, as part of the detailed CoCP(s). The plan will include emergency pollution control measures (based on Environment Agency guidelines where appropriate), fire, site evacuation, and spill prevention control procedures and instructions to workforce. The Emergency Response and Pollution Control Plan will also contain emergency phone numbers and the method of notifying local authorities and statutory authorities. The procedures will be displayed at the work sites and all site staff will be required to follow them.

2.3 Pollution incident control

2.3.1.1 The Principal Contractor will develop and implement appropriate measures to control the risk of pollution due to construction works, materials and extreme weather events. Information relating to the emergency flood response is covered in **Volume F2, Chapter 6**, **Outline Onshore Infrastructure Drainage Strategy**. In the event of extreme weather with the risk of flooding, contractors and management should liaise with the LLDA and Environment Agency so they are aware of any forecast related to heavy rainfall events. A flood warning can then be issued when necessary to allow work to stop, especially in areas in close proximity to key watercourses. This will include an Emergency Response and Pollution Control Plan, which will identify potential sources and activities which might result in the risk of pollution from construction and will presents pro-active management practices to ensure that any pollution that may if not prevented, is minimised, controlled, reported to the relevant parties and remediated.

3 Measures for protection of surface water environment during construction

3.1 Objective

3.1.1.1 To minimise the risk of surface water flooding during the construction phase, to prevent pollution of surface watercourses and to minimise potential impacts on local surface water features.

3.2 Management measures

3.2.1.1 Onshore construction activities could potentially release fine sediments and contaminants from construction machinery and materials into surface water bodies. In line with Co4, Co6 and Co13 (Table 1), appropriate environmental best practice will be followed to minimise impacts on watercourses and local surface water features. This will include but is not limited to: CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (Masters-Williams 2001); CIRIA C648 Control of Water Pollution from Linear Construction Projects (Murnane, Heap, and Swain 2006) and CIRIA – SuDS Manual (CIRIA 2015).

3.2.1.2 The following mitigation measures for the protection of surface water during construction activities will be implemented:

- Management of construction works to comply with the necessary standards and consent conditions as identified by the Environment Agency;
- A briefing highlighting the importance of water quality, the location of watercourses and pollution prevention will be included within the site induction;
- No discharge to surface watercourses will occur without permission from the Environment Agency;
- Wheel washers and dust suppression measures to be used as appropriate, where necessary, to prevent the migration of pollutants;
- Regular cleaning of access roads of any construction waste and dirt to be carried out;
- Measures will be employed to intercept and treat run-off from the working corridor, for example by using sandbags, settlement tanks and lagoons. After treatment, discharge of any waters will be carried out so as to minimise physical impacts on channel morphology;
- Surface water flowing into the trenches during the construction period will be pumped via settling tanks or ponds to remove sediment and potential contaminants, before being discharged into local ditches or drains via temporary interceptor drains. Where gradients on site are significant, cable trenches will include a hydraulic brake (bentonite or natural clay seals) to reduce flow along trenches and hence reduce local erosion;
- Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) will be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage system or the local watercourses;

- Bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater in the event of a leakage or spillage. Bunds used to store fuel, oil etc. to have a 110% capacity;
- Excavated material will be placed in such a way as to avoid any disturbance of areas near to the banks of the watercourses and spillages into the watercourses, where possible;
- Where possible, less toxic alternative materials will be used for construction, particularly for works close to watercourses;
- All plant machinery and vehicles will be routinely checked and be maintained in a good condition to reduce the risk of fuel leaks; and
- Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained. Machinery will be routinely checked to ensure it is in good working condition. Any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment.

3.2.1.3 A contaminated land and ground water scheme will be prepared (DCO Requirement 14) to identify any contamination and any remedial measures which may be required (Co77). For further information, an assessment of potentially contaminated land has been assessed in **Volume A6, Annex 1.1: Land Quality Preliminary Risk Assessment** and the risks considered in **Volume A3, Chapter 1: Geology and Ground Conditions**.

3.2.1.4 A Construction Drainage Scheme will be developed for the temporary construction works (Co14) in accordance within **Volume F2, Chapter 6: Outline Onshore Infrastructure Drainage Strategy**.

3.2.1.5 Surface water drainage and the potential for subsequent water pollution has been addressed in the **Volume F2, Chapter 6: Outline Onshore Infrastructure Drainage Strategy**.

4 Measures for the protection of ground water during construction

4.1 Objective

4.1.1.1 To protect the underlying secondary and principle aquifers in terms of groundwater quality and flow throughout the construction phase.

4.2 Management Measures

4.2.1.1 In line with Co4, Co6 and Co13 listed in **Table 1**, appropriate environmental best practice will be followed to minimise impacts on watercourses.

4.2.1.2 Measures will be implemented to protect groundwater during construction, including good environmental practices based on legal responsibilities and guidance on good environmental management in: guidance in: CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (2001); and CIRIA C648 Control of Water Pollution from Linear Construction Projects (2006).

4.2.1.3 The following mitigation measures for the protection of surface water during construction activities will be implemented:

- Deep trenchless excavations and deep excavations for pile foundations to be mitigated by casing off perched groundwater units during construction works and sealing off once the casing is removed;
- Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained;
- Bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage/spillage;
- Inert bentonite or natural clay seals may be used as a drilling fluid and to seal deep excavations where there is a risk that groundwater could be compromised, thereby reducing or eliminating the pathway whereby new contaminants can enter groundwater as a result of subsurface activities. For further information regarding the risk of Bentonite break out please see **Section 5**;
- During construction of pile foundations, the following guidance will be used: Piling and Penetrative Ground Improvement Methods on land Affected by Contamination: Guidance on Pollution Prevention (Environment Agency 2001), or latest relevant available guidance (Co6);
- Where cable trenching or road widening of the construction accesses is required across perched or near-surface secondary A or B aquifers, measures will be implemented to protect groundwater quality, and these will be detailed within the Pollution Prevention Plan (Co4). Additionally, in such areas, thermally insulated cables will be used to minimise effects on groundwater temperature). Furthermore, measures to ensure that the cable trench does not become a conduit for groundwater flow will also be implemented. All such appropriate measures will be identified following consultation with the Environment Agency and will be reported within the detailed

CoCP(s) (Co124) and in line with the requirements of Section 23-25 of the Land Drainage Act 1991, or the latest relevant available guidance (Co13); and

- A contaminated land and groundwater scheme will be prepared (DCO Requirement 14) to identify any contamination and any remedial measures which may be required (Co77).

4.2.1.4 Minimise, where practicable, the production of silt and contaminated water by minimising for example:

- Disturbance of riverbed and bank;
- Dewatering and pumping of excavations and subsequent disposal of water;
- Runoff from exposed ground and stockpiles;
- Plant and wheel washing;
- Site roads and river crossings;
- Fuel spillages; and
- Waste storage and disposal.

4.2.1.5 HDD (or other trenchless techniques) will be used to cross all Main River and Internal Drainage Board (IDB) maintained drains, including the River Hull Headwaters Site of Special Scientific Interest (SSSI) (Co1). As per Co18, the entry and exit points will be located at least 9 m away from IDB and Ordinary surface watercourses and 20 m from Environment Agency surface water courses or the landward toe of the Environment Agency surface watercourse's flood defences. Where a surface watercourse is to be crossed by HDD, the onshore export cables will be installed at least 1.2 m beneath the hard bed of any watercourses and the optimal clearance depth beneath watercourses will be agreed with the relevant authorities prior to construction. Where Environment Agency flood defences are present a minimum 1.2 m vertical clearance will be maintained between the hard bed of the watercourse and the landward toe of those flood defences. Further information regarding crossing techniques is provided in **Volume A4, Annex 4.2: Crossings Schedule**. Joint Bays and Link Boxes will also be located a minimum of 20 m away from Environment Agency Main Rivers (Co170).

4.2.1.6 Where Hornsea Four crosses sites of particular sensitivity (e.g. embanked Environment Agency watercourses, SSSIs or groundwater Inner Source Protection Zones (SPZs)) a hydrogeological risk assessment will be undertaken to inform a site specific crossing method statement which will also be agreed with the relevant authorities prior to construction (Co18). This is to minimise the risk of bentonite break out (or "frac-out") and avoid disruption of groundwater flows to surface watercourses. In the event of a bentonite break out, the measures provided in the Bentonite Breakout Plan would be followed (to be provided as part of the detailed CoCP(s), in accordance with the measures provided in see **Section 5**.

4.2.1.7 A detailed method statement will be prepared for HDD crossings with site-specific method statements for the crossings of Environment Agency Main Rivers and IDB watercourses. The method statements will be developed in consultation with the Environment Agency (see Section 5 of the oCoCP). The method statement will include details of the proposed HDD design, any monitoring to be undertaken and any remedial measures to be put in place. The

method statement will also take into account the measures within the bentonite break out plan.

4.2.1.8 Site investigations will be undertaken at regular intervals along the onshore ECC, likely at large HDDs and/or sensitive HDD locations, prior to undertaking the respective HDD, to confirm local geological conditions. The Environment Agency will be consulted on the methodology of the site investigations.

4.2.1.9 Measures to prevent and control spillage of oil, chemicals and other potentially harmful liquids will be implemented. Appropriate storage and handling of materials and products will be provided and will include for example:

- Avoidance of oil storage within 50 m of a spring, well or borehole; or within 10 m of a watercourse;
- Secondary containment system that can hold at least 110% of the oil volume stored; and
- Avoidance of oil storage where oil could potentially run over hard ground into a watercourse.

4.2.1.10 In accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001, refuelling of machinery will be undertaken within designated areas where spillages can be easily contained.

4.2.1.11 Machinery would be routinely checked to ensure it is in good working condition; and any tanks and associated pipe work containing oils and fuels would be double skinned and be provided with intermediate leak detection equipment. Measures would be employed to intercept and treat run-off from the working width. After treatment, discharge of any waters will be carried out so as to minimise physical impacts on channel morphology. Discharges would not be made without prior agreement and appropriate consents and approvals from the Environment Agency and relevant IDB.

4.2.1.12 Used oils will be disposed of properly in accordance with Environmental Permitting (England and Wales) Regulations 2016.

5 Bentonite Break Out Plan

5.1.1.1 During HDD operations or other trenchless technologies, the drill head is lubricated with a mixture of water and bentonite clay that is injected under high pressure. If there is a fracture in the location of the drill path, the pressure could cause the bentonite slurry to travel along the 'path of least resistance' to the surface. This is more likely to occur at each end of the HDD where the drill path is closest to the surface. This process is referred to as a bentonite break out or 'frac-out' i.e. the unintentional return of drilling fluid to the surface.

5.1.1.2 Bentonite is a fine clay material which is non-toxic and is commonly used in farming practices. However, it is also alkaline and when discharged into the water environment, it can affect water quality and also water habitats by smothering plants and river gravels

5.1.1.3 The Bentonite Breakout Plan will be completed upon appointment of a Principle Contractor as part of the detailed CoCP(s). The plan will be submitted to and approved by the Applicant prior to formal submission to ERYC for approval. The purpose of a Bentonite Breakout Plan is to minimise the potential for a breakout, ensure early detection, protect areas that are considered environmentally sensitive and set out a response plan should a breakout occur.

5.1.1.4 The plan will outline the design protocols that will be implemented to minimise the risk of a 'break out,' for example, there would be a design protocol for the protection of sensitive ecological receptors. These measures may include but are not limited to, walkover surveys, onsite briefings, barriers to be erected between bore site and the nearby sensitive resources prior to drilling where appropriate, the presence of an on-site Ecological Clerk of Works (ECoW) where necessary and maintaining necessary response equipment on-site or at a readily accessible location in good working order.

6 Management of spillages

6.1.1.1 As referenced in **Section 3** and **Section 4**, measures will be put in place to prevent spillages including:

- In accordance with The Control of Pollution (Oil Storage) (England) Regulations (2001), refuelling of machinery would be undertaken within designated areas where spillages can be easily contained;
- Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) will be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage system or the local watercourses;
- Bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater in the event of a leakage or spillage. Bunds used to store fuel, oil etc. to have a 110% capacity;
- All plant machinery and vehicles will be routinely checked and be maintained in a good condition to reduce the risk of fuel leaks;
- Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained. Machinery will be routinely checked to ensure it is in good working condition. Any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment;
- Avoidance of oil storage within 50 m of a spring, well or borehole; or within 10 m of a watercourse;
- Avoidance of oil storage where oil could potentially run over hard ground into a watercourse; and
- Used oils will be disposed of properly in accordance with Environmental Permitting (England and Wales) Regulations 2016.

6.1.1.2 In the case that spillages or leaks occur during construction, the procedures and measures will be set out in the Emergency Response and Pollution Control Plan (**Section 1.4**). The Bentonite Break Out Plan will cover the procedures and measures should a bentonite breakout occur during HDD activities, please refer to **Section 5**.

7 References

CIRIA (2001) C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors. London, CIRIA.

CIRIA (2006) C648 Control of Water Pollution from Linear Construction Projects. London, CIRIA.

CIRIA (2015) C753 SuDS Manual. London, CIRIA.

Department for Environment, Food and Rural Affairs (2001) Control of Pollution (Oil Storage) (England) Regulations 2001.

Department for Environment, Food and Rural Affairs (2016) Environmental Permitting (England and Wales) Regulations 2016.

Environment Agency (2004) PPG08 – Storage and disposal of used oils:

Environment Agency (2007) PPG05 – Works near or liable to affect watercourses:

Environment Agency (2009) PPG21 – Pollution incident response planning:

Environment Agency (2012) PPG06 – Working at construction and demolition sites:

Environment Agency (2014) PPG01 – General guide to the prevention of water pollution.

Appendix E – Outline Site Waste management plan

Appendix E – Outline Site Waste Management Plan

1 Introduction

1.1 Project Background

1.1.1.1 This document comprises the outline Site Waste Management Plan (oSWMP) for Hornsea Four and forms Appendix E of the outline Code of Construction Practice (oCoCP). It sets out the measures that the appointed Principal Contractor(s) will take to waste management associated with the construction of onshore elements of Hornsea Four (landward of Mean Low Water Springs (MLWS)). Details of the activities and infrastructure that comprise the project description for Hornsea Four is provided in **Volume A1, Chapter 4: Project Description**.

1.2 Purpose of the Site Waste Management Plan

1.2.1.1 The purpose of the oSWMP is to meet the requirements of the Overarching National Policy Statement (NPS) for Energy (EN-1), as part of the Government's policy on hazardous and non-hazardous waste which is intended to protect human health and the environment by producing less waste and by using it as a resource wherever possible. A detailed SWMP will be developed (Co65, to be appended to the detailed CoCP(s), secured via the CoCP, which is secured by Requirement 17 of the draft Development Consent Order (DCO) (**Volume C1.1: Hornsea Four Draft DCO**)) which will be agreed with ERYC prior to commencement of the relevant stage of the connection works.

1.2.1.2 SWMPs were introduced by the Site Waste Management Plan (England) Regulations 2008 and despite the regulations being repealed in 2013, SWMPs continue to be regarded as a best practice tool in achieving better waste management on construction projects.

1.2.1.3 According to EN-1, applications for a proposed development must consider the types and quantities of waste that would be generated in all phases of a development and identify how the waste would be managed. EN-1 requires developers to prepare a SWMP that identifies the waste management arrangements for all types of waste and provide information on the proposed systems that would be used.

1.2.1.4 The application, in following best practice, should demonstrate that the waste hierarchy has been applied and that the volume of waste generated, and the volume of waste sent for disposal would be minimised (see **Section 4**).

1.2.1.5 It is also intended that on the basis of the above, the detailed SWMP will provide statutory and non-statutory consultees with sufficient information to understand the types and volumes of wastes likely to be generated from the construction of Hornsea Four and how the wastes will be managed.

1.2.1.6 This oSWMP sets out:

- The waste regulation framework;
- The indicative types of waste that will be generated during construction;

- How the waste will be managed during construction – i.e. will it be reduced, re-used or recycled; and
- The methods used to measure and record the quantity of waste generated from Hornsea Four.

1.2.1.7 Offshore waste is considered in the **Volume A4, Annex 4.4: Dredging and Disposal (Site Characterisation)** (which deals with the disposal of dredged material from sandwave clearance and drill arisings from foundation installation). Post consent, a Construction Project Environmental Management and Monitoring Plan (CPEMMP) will be prepared that will set out details of waste management and disposal arrangements for offshore wastes (see Co111 of **Volume A4, Annex 5.2: Commitment Register**).

1.3 Site Waste Management Plan Governance

1.3.1.1 The responsibility for ensuring that measures set out in the detailed SWMP are delivered rests with the Principal Contractor(s) appointed to carry out the works; with ERYC as the enforcing agency.

1.3.1.2 The oSWMP will inform the development of a detailed SWMP, which will be agreed with ERYC prior to commencement of the relevant stage of the connection works. The SWMP will be reviewed and updated during the construction phase as required (such as to reflect the progress of Hornsea Four). The Principal Contractor(s) will be responsible for updating the SWMP and will make the SWMP available to ERYC during the construction period on request. No additional consultation is anticipated during this process.

1.4 Structure

1.4.1.1 This oSWMP adheres to the following structure:

- **Section 2**– outlines the regulatory framework
- **Section 3** – proposals for the identification of waste arisings;
- **Section 4** – proposals for management of waste;
- **Section 5** – implementation of the SWMP; and
- **Section 6** – proposals for auditing, monitoring and review.

1.5 Site Waste Management Plan Commitments

1.5.1.1 The Applicant has developed a range of Commitments to eliminate or reduce impacts and effects. All Commitments identified for Hornsea Four are detailed within the Commitments Register (see **Volume A4, Annex 5.2: Commitments Register**).

1.5.1.2 The Commitments Register includes a number of commitments relevant to the SWMP. Commitments of most relevance to this oSWMP are listed in **Table 1**.

Table 1: oSWMP Commitments.

Commitments ID	Measure Proposed	How the measure will be secured
Co65	Tertiary: A Site Waste Management Plan (SWMP) will be developed in accordance with the Outline Site Waste Management Plan, with consideration of the latest relevant available guidance.	DCO Requirement 17 (CoCP)

2 Regulatory Framework

2.1 Definition of Waste

2.1.1.1 For the purpose of this document the definition of 'waste' is taken from Article 3(1) of the revised European Waste Framework Directive (2008/98/EC), which states that waste is *"any substance or object which the holder discards or intends or is required to discard"*.

2.1.1.2 'Discard' includes the recovery and recycling of a subject or object as well as its disposal. The decision on whether something is discarded must take account of all the circumstances (for example, the nature of the material, how it was produced and how it will be used) and have regard to the aims of the Waste Framework Directive, which is *"the protection of human health and the environment against harmful effects caused by the collection, transport, treatment, storage and tipping of waste"*.

2.1.1.3 Guidance on the interpretation of the Waste Framework Directive definition of waste is taken from Defra's published 'Guidance on the legal definition of waste and its application' (Defra 2012), which provides a practical guide to help organisations make decisions about whether a material is a waste or not.

2.1.1.4 The document also takes into account CL:AIRE's Definition of Waste: Development Industry Code of Practice (CoP) (CL:AIRE 2011). The CoP sets out good practice for the development industry to use when:

- *"Assessing on a site specific basis whether excavated materials are classified as waste or not; and*
- *Determining on a site specific basis when treated excavated waste can cease to be waste for a particular use".*

2.1.1.5 The CoP will be taken into account by the Environment Agency in deciding whether to regulate materials as waste. If materials are dealt with in accordance with the CoP, the Environment Agency considers that those materials are unlikely to be waste if they are used for the purpose of 'land development'.

2.1.1.6 The scope of the CoP relates to 'excavated materials' which include:

- Soil, both topsoil and subsoil, parent material and underlying geology;

- Ground based infrastructure that is capable of reuse within earthworks projects (e.g. road base, concrete floors);
- Made ground; and
- Stockpiled excavated materials that include the above.

2.2 Legislation and Guidance

2.2.1.1 The legislative framework for the management of construction wastes comprises the following:

- Environmental Protection Act 1990;
- Environment Act 1995;
- Hazardous Waste (England and Wales) Regulations 2005;
- Revised Waste Framework Directive (2008/98/EC);
- Landfill Directive (1999/31/EC);
- Environmental Permitting (England and Wales) Regulations 2016 (as amended);
- Waste Management (England and Wales) Regulations 2006;
- Waste (England and Wales) Regulations 2011;
- Technical guidance MW3: waste Classification – Guidance on the classification and assessment of waste (EA, 2014) (as updated in 2018);
- Waste Duty of Care: Code of Practice (Defra, 2016); and
- Joint Sustainable Waste Management Strategy (ERYC and Hull City Council (HCC), 2012).

2.2.1.2 The framework of waste management legislation in the UK is currently shaped by the Waste Framework Directive. The Directive is transposed into UK law by the Waste (England and Wales) Regulations 2011 (as amended). These regulations require all businesses and organisations that produce waste to take all reasonable measures to prevent waste, to apply the waste hierarchy (refer to Section 4.1) when transferring waste using the definitions in Article 3 of Directive 2008/98/EC, and include a declaration on their waste transfer notes or consignment notes to that effect. Standard Industry Classification (SIC) Codes 2007 (Office for National Statistics 2009) of the waste producer must also be provided in the waste transfer note. The SIC is a system for classifying industries by a four-digit code.

2.2.1.3 Hazardous Waste (England and Wales) Regulations 2005 (as amended) set out the requirements for controlling and tracking the movement of hazardous waste and bans the mixing of different types of waste. Under the Regulations "mixing" includes mixing of different categories of hazardous waste, non-hazardous wastes or any other substance or material.

2.3 Key Obligations

2.3.1 Duty of Care

2.3.1.1 A key requirement of section 34 of the Environmental Protection Act 1990 is that the waste producer is responsible for ensuring that their waste is collected by an appropriately licensed

waste carrier and managed at a suitably licensed facility. These requirements are set out in the 'Waste Duty of Care: Code of Practice' (Defra 2016). To meet these requirements, waste materials arising from the construction of Hornsea Four will only be transported by waste carriers and hazardous waste carriers holding a valid registration with the Environment Agency. Each consignment of waste removed from the construction site will be accompanied by a waste transfer note (or hazardous waste consignment note as appropriate), which correctly describes the waste using the European Waste Catalogue code, identifies the waste carrier and where the waste will be transported to.

2.3.1.2 Requirements for transferring waste and registered waste carriers are set out in Part 8 and 9 of the Waste (England and Wales) Regulations 2011. The waste will only be transferred to facilities that have the benefit of a registered waste exemption, or an environmental permit. Periodic audits would be undertaken of these facilities. Prior to construction commencing, the developer and Principal Contractor(s) will sign the declaration in **Table 2** to confirm that waste from the construction of Hornsea Four will be managed in accordance with the duty of care requirements.

Table 2: SWMP declaration.

Name of Developer	
Contact	
Principal Contractor	
Site Waste Management Plan Prepared by	
Date	
Project Details	
Estimated Build Cost of the Project	
Declaration	
All waste from the site will be dealt with in accordance with the duty of care in section 34 of the Environmental Protection Act 1990 and the duty of care provisions in the Waste (England and Wales) Regulations 2011 (formerly the Environmental Protection (Duty of Care) Regulations 1991). Materials will be handled efficiently, and waste managed appropriately.	
Signature of the Developer	Signature of Principal Contractor

2.3.2 Pre-treatment of Wastes

2.3.2.1 Inert, non-hazardous and hazardous wastes destined to be landfilled will be pre-treated prior to disposal in accordance with the EU Landfill Directive (1999/31/EC). Treatment can comprise physical, thermal, chemical or biological processes providing that they change the characteristics of the waste in order to reduce its volume or hazardous nature or to facilitate its handling or recovery.

3 Identification of Waste Arisings

3.1 Waste types

3.1.1.1 At a strategic level, the key waste streams generated from the construction of the onshore elements of Hornsea Four can be classified as:

- **INERT** – wastes that will not cause adverse effects to the environment when disposed of, or do not decompose and they have no potentially hazardous content when placed in a landfill. Examples of inert wastes are rocks, concrete, mortar, glass, uncontaminated soils and aggregates;
- **NON- HAZARDOUS** – wastes that will decompose when buried resulting in the production of methane and carbon dioxide. Examples of non-hazardous wastes include timber, paper and cardboard; and
- **HAZARDOUS** – wastes that are harmful to human health or the environment (for example, pollution of watercourses) if they are incorrectly contained, treated or disposed of. Hazardous wastes may have one or more of the following properties: explosive, corrosive, flammable, highly flammable, infectious, oxidising or sensitising.

3.1.1.2 Hornsea Four is anticipated to generate a number of different waste types during construction. This will include (but is not limited to) wastes contained within the following list of waste categories (also known as waste classification codes, as identified in Environment Agency 2014):

- 17 01 Concrete, bricks, tiles and ceramics;
- 17 02 Wood, glass and plastic;
- 17 03 Bituminous mixtures, coal tar and tarred products;
- 17 04 Metals (including their alloys);
- 17 05 Soil (including excavated soil from contaminated sites), stones and dredging spoil;
- 17 06 Insulation materials and asbestos-containing construction materials;
- 17 08 Gypsum-based construction material; and
- 17 09 01* Construction and demolition wastes containing mercury.

3.1.1.3 It is noted that a number of sub-categories of wastes are included within the above. The waste codes for each specific waste type will be provided on each waste transfer note that will accompany every movement of waste from Hornsea Four construction areas.

3.2 Estimated Waste Arisings

3.2.1 Waste Types

3.2.1.1 The groupings of inert, non-hazardous and hazardous have been split into the key waste types based on the available design information. Where appropriate, the wastes are described according to the general List of Waste Categories for construction wastes. The

list of wastes given Table 3 is not exhaustive and may be extended as the detailed design and construction philosophy develops after consent.

Table 3: Key Indicative Waste Forecasts.

Construction Element	Material	Type of Waste	EWC Code	Estimated Quantity*	Target for re-use/recycle (%)
Landfall	Topsoil Subsoil	Non-hazardous	17 05 04		100%
	Cable		17 04 11		70%
	Bentonite - drilling muds		17 04 11		70%
Onshore Export Cable Corridor (ECC)	Topsoil Subsoil	Non-hazardous	17 05 04		100%
	Green waste		20 02 01		100%
	Cable		17 04 11		70%
	Bentonite - drilling muds		01 05 99		70%
Jointing Pits	Subsoil	Non-hazardous	17 05 04		100%
	Packaging waste		15 01 01 15 01 02		70%
	Cable		17 04 11		70%
Haul Road(s)	Stone	Non-hazardous	17 05 04 or 03		70%
Logistics Compounds	Stone	Non-hazardous	17 05 04 or 03		70%
Onshore substation (OnSS) and Energy Balancing Infrastructure (EBI) access road	Topsoil Subsoil	Non-hazardous	17 05 04		100%
OnSS and EBI	Topsoil Subsoil	Non-hazardous	17 05 04		100%
	Green waste		20 02 01		100%
	Packaging waste		15 01 01 15 01 02		70%
	Concrete		17 01 01		70%
	Metal		17 04 07		70%
	Cable		17 04 11		70%
Staff welfare areas	Paper and cardboard	Non-hazardous	20 01 01		100%
	Glass		20 01 02		100%
	Plastic		20 01 39		70%
	Food waste		20 01 08		70%

Notes:
*: The estimated quantity of waste types will be confirmed prior to commencement of the relevant stage of the connection works.

3.2.2 Completing Site Waste Management Plan Data Sheets

3.2.2.1 The indicative types of waste to be generated from the construction of the onshore elements of Hornsea Four are identified in **Table 3**. The forecast is a useful planning tool to record the types of waste that will be generated. Targets can then be set for different waste types and entered into a Waste Estimates Data Sheet (to be produced as part of the detailed SWMP). This will identify how the waste types will be managed (i.e. re-used on site, recycled off site etc).

3.2.2.2 Once construction is underway, the Principal Contractor(s) will complete a Waste Management Data Sheet (a template of which is to be produced as part of the detailed SWMP). These sheets will be updated every time waste is removed from the construction site and will record:

3.2.2.3 The types and quantities of waste produced;

- The types and quantities of waste that have been re-used/ recycled/ recovered/ landfilled or otherwise disposed of on or off site;
- The identity of the person removing the waste;
- The registration number of the waste carrier;
- A copy of or reference to the written description of the waste; and
- Details of the site where the waste is taken to and whether it holds a permit or is exempt.

3.2.2.4 The SWMP will be reviewed by the Principal Contractor(s) during the construction process to check progress in meeting the reuse/recycling targets and to identify if any changes are required to the waste management measures. Any changes will be provided to ERYC upon request.

3.2.2.5 On completion of construction of the relevant stage of the connection works, a comparison of the estimated waste arisings (Waste Estimates Sheet) and the actual waste management data (Waste Management Data Sheet) will be undertaken by the Principal Contractor(s) (see **Paragraph 5.1.3.1**).

3.2.3 Setting Targets to Divert Waste from Landfill

3.2.3.1 A target has been set to reuse, recycle or recover 70% of overall construction waste generated by Hornsea Four. This target is in line with the target in the Waste (England and Wales) Regulations 2011 (as amended) and the Waste Framework Directive. This target is also in line with the good practice target set in the Building Research Establishment

Environmental Assessment Methodology BREEAM New Construction Manual (BRE Global Ltd, 2018).

3.2.3.2 Further targets will be set to reduce, reuse or recycle key waste materials (for example, topsoil and stone) on and/or off the construction areas where applicable. Preliminary material targets are included in **Table 3**. These targets will be re-visited, and further targets will be added as the project design and the construction philosophy progress, typically post-consent. Further information will be provided in the detailed SWMP, to be submitted as part of the detailed CoCP(s). The setting of targets allows the performance of the SWMP to be monitored and evaluated at the end of the construction period.

3.2.3.3 A target benchmark for resource efficiency will be set for the construction of the OnSS and EBI. This would follow the construction resource efficiency benchmark set in the BREEAM New Construction Manual (BRE Global Ltd 2018), which is 13.3 m^3 (or 11.1 tonnes) of non-hazardous construction waste generated per 100 m^2 (gross internal floor area).

3.2.3.4 The targets will be incorporated into the contract specifications with the Principal Contractor(s) post-consent.

4 Management of Waste Arisings from Hornsea Four

4.1 Waste Hierarchy

4.1.1.1 Construction waste generated from the development of Hornsea Four will be managed according to the principles of the waste hierarchy. The waste hierarchy ranks waste management options according to what is best for the environment. It gives top place to waste prevention. When waste has been generated, priority is given to preparing it for re-use, then recycling, then recovery, and last of all disposal (for example, landfill). The waste hierarchy is a key element of sustainable waste management and is a legal requirement of the revised EU Waste Framework Directive and the Waste (England and Wales) Regulations 2011.

4.1.1.2 Defra has published guidance on how the waste hierarchy should be applied to a range of common wastes (Defra 2011). It summarises the findings of current scientific research on the environmental impacts of various waste management options for a range of materials and products. The guidance states that for most materials the waste hierarchy ranking applies. However, the evidence suggests that for some materials, the preferred waste management option (i.e. with the lowest environmental impact) does not follow the waste hierarchy order. This is true for lower grades of wood, where energy recovery options are more suitable than recycling.

4.1.2 Prevention

4.1.2.1 Waste can be minimised during the design stage, including the following measures:

- Using prefabricated materials for on-site assembly;

- Buildings/structures designed to standard dimensions of blocks or frames to avoid off-cuts;
- Topsoil and subsoil generated from the site preparation works at the OnSS and EBI will be retained on site where possible to be used in the site restoration and landscaping; and
- Internal materials and fittings will be pre-cut to reduce the need for site cutting.

4.1.2.2 Waste will also be minimised by improving wastage rates when ordering materials. Waste allowances are generally included within material orders to take into account design waste and construction process waste. These waste allowances are often generic and not project specific and therefore, run the risk of being inaccurate. This can lead to a surplus of materials, which typically ends up being discarded (i.e. waste). A system will be put in place to enable the accurate estimates of material requirements (and waste allowances) at the detailed design stage.

4.1.2.3 On appointment of the Principal Contractor(s), the purchasing requirements will be discussed with the Site Manager(s) to identify priorities and review the quotations received. Materials will be checked against the material specifications as part of the quality control system. Where possible, hazardous materials will be substituted for less hazardous alternatives.

4.1.2.4 Waste minimisation measures will be implemented by the Principal Contractor(s) and Site Manager(s) during construction in order to achieve the waste allowance targets. These measures include:

- Subsoil and Topsoil generated from the construction of the onshore ECC will be used as backfill to reinstate the trenches;
- A logistic system which allows 'just-in-time' deliveries to minimise the length of time materials are stored on-site and co-ordinate with other trades;
- Providing suitable and secure storage for materials where 'just-in-time' deliveries cannot be set up;
- Mechanical systems and machinery will be considered for moving materials to reduce the risk of damage; and
- Programming and monitoring construction activities to avoid overlap of incompatible trades working in the same area and to reduce the potential for waste to be generated from replacing damaged work.

4.1.3 Preparing for Re-Use

4.1.3.1 The installation of the onshore ECC will require the construction of a temporary haul road and temporary logistics compounds (including landfall and OnSS. The haul road will be constructed of on average 400 mm depth of permeable crushed gravel aggregate with a geotextile membrane. For the compounds, an average depth of 300-500 mm permeable aggregate would be used.

4.1.3.2 On completion of the cable installation works, the haul road will be dismantled (i.e. the gravel and membrane would be removed). The use of the geotextile membrane underneath

the gravel will allow a greater proportion of the aggregate to be recovered as it would be easy to segregate from the underlying soil. Where possible, opportunities to re-use the aggregate to construct other elements of Hornsea Four will be investigated. Landowners may also be given the option of re-using the stone on their land for maintaining farm tracks. Alternatively, the aggregate will be transported to a local waste management facility for re-use on construction projects elsewhere. Where possible, durable geotextile underlay/protective matting will be selected to allow its reuse on other projects. Opportunities to reduce packaging or implement take-back schemes for packaging and unused materials will also be discussed with the suppliers.

4.1.4 Recycling

4.1.4.1 Waste generated during the construction process will be segregated into waste types to facilitate off-site recycling (for example, metals, wood, plastic). Layout of the primary logistics compound, as well as the compounds at the OnSS and landfall areas will be designed to allow sufficient space for separate containers of key waste materials to be stored. These containers will be clearly labelled, and construction staff will be given training on waste segregation.

4.1.4.2 Green waste generated during site preparation works will be composted off-site. Opportunities will be investigated to retain woody material on site for ecological habitats, however this would be subject to agreement with landowners.

4.1.4.3 The Principal Contractor(s) will consider the use of recycled materials where possible, subject to client approval, cost and availability (for example, recycled aggregate and secondary aggregates for use in concrete, or granular fill).

4.1.5 Disposal

4.1.5.1 All waste that cannot be reused, recycled or recovered will be collected by the licensed waste management contractor and disposed of at a permitted site suitable for the type of waste. Burning of surplus material or material arising from the construction of Hornsea Four will not be permitted.

4.2 Storage of Waste

4.2.1.1 Waste storage areas will be provided at the primary logistics compound, the landfall compound and within the compound at the OnSS and EBI. Smaller waste storage areas will be provided in the secondary compounds along the onshore ECC as required. Each skip/container will be clearly marked to indicate the intended contents and will be suitable for the storage of the specified contents. All skips/containers will be covered to prevent the escape of waste by windblow or vandalism. If liquid waste is being stored, an appropriate bund and drip pans will be in place. Storage areas will be located away from potential contaminant pathways such as soakaways and drains, trial pits, excavations and trenches.

Any hazardous waste will be stored safely in a designated area away from non-hazardous and inert wastes and labelled accordingly.

4.3 Registered Carriers

4.3.1.1 Construction waste generated by Hornsea Four will only be transported by companies registered with the EA and with valid waste carrier licences as required by the 'Waste Duty of Care Code of Practice' and legislation (i.e. Environmental Protection Act section 34 and the Waste (England and Wales) Regulations 2011).

5 Implementation of the Site Waste Management Plan

5.1 Roles and Responsibilities

5.1.1.1 Although the construction team has not been appointed at the time of writing this plan, the key roles and associated responsibilities with regard to this oSWMP are outlined below. The Construction (Design and Management) Regulations 2015 also identify the legal duties, responsibilities and obligations of all the major roles within the construction team.

5.1.2 Developer

5.1.2.1 The developer will be responsible for the following:

- Appointing onshore Principal Contractor(s) for the purpose of the SWMP Regulations;
- Ensuring that the SWMP is implemented effectively;
- Giving necessary direction to contractors (for example, setting contractual obligations); and
- Reviewing, revising and refining the SWMP (where necessary) in conjunction with the Principal Contractor.

5.1.3 Principal Contractor(s)

5.1.3.1 The Principal Contractor(s) will have the overall responsibility for:

- Updating and delivering the SWMP;
- Ensuring all procedures in the SWMP are followed;
- Ensuring all contractors are suitably qualified and experienced in implementing the measures within the SWMP. These measures will be contained within the terms of contracts to ensure understanding and accountability;
- Ensuring that all legal and contractual requirements relating to the SWMP are met by ensuring adequate plans/procedures, licences and certificates are in place, and that they can be achieved;
- As a requirement of the SWMP the Principal Contractor(s) will regularly (not less than every six months) review the SMWP to ensure that it accurately reflects the progress of the project and update where necessary;
- Establish procedures for the regular review and recording of the quality of the works as part of its Quality Management System;

- Maintain records relevant to the SWMP; and
- Within three months of work being completed, the Principal Contractor(s) must confirm that the SWMP has been monitored (and updated) on a regular basis throughout the project; compare the actual waste quantities against the estimated quantities of each waste type; and provide an explanation of any deviation from this plan. This information will be provided within a Close Out report, provided to the Applicant.

5.1.4 Contractors/Sub Contractors

5.1.4.1 Contractors and sub-contractors will be responsible for carrying out the waste management tasks in this oSWMP.

5.2 Training

5.2.1.1 A training regime will be implemented to ensure that all relevant members of the onshore construction teams, including sub contractors' personnel receive focused SWMP training to ensure their competence in carrying out their duties on the project.

5.2.1.2 Any SWMP training will be additional to the mandatory training requirements on site Health and Safety.

5.2.2 Environmental Induction

5.2.2.1 A general site induction will be developed to introduce all site personnel to the environmental issues connected with the SWMP, important environmental controls associated with the day to day operation of the project and effective delivery of the SWMP (for example, waste storage arrangements, appropriate waste segregation). A full register of induction attendance will be maintained on site.

5.2.2.2 Onshore construction staff will be briefed on the SWMP and the waste management procedures to be followed.

5.2.3 Toolbox Talks and Method Statement Briefings

5.2.3.1 Toolbox talks and method statement briefings will be given to onshore construction teams as work proceeds and will cover the types of wastes produced at each key build stage, and the SWMP controls related to specific activities undertaken during the works (for example, recycling of concrete). A full register of toolbox talks and method statement briefing attendance will be maintained on site.

5.2.4 Training Records

5.2.4.1 All training records will be maintained and filed on-site. The records will include the content of the courses (induction and toolbox training), record of attendance and schedule of review.

6 Audit, monitor and review

6.1 Site Inspection

6.1.1.1 Regular inspections of the onshore construction works will be undertaken by the Principal Contractor(s) (or appropriately trained member of the construction staff) to ensure the continued compliance of site operations with the provisions of the SWMP and control measures outlined in relevant method statements

6.2 Monitoring of the Site Waste Management Plan

6.2.1.1 Appropriate Duty of Care paperwork for the movements of waste (for example, waste transfer notes) will be retained on site. Volumes (m^3 or tonnes) and waste types will be recorded for all wastes sent for reprocessing, recycling or disposal. Records will also be kept of waste re-used/recycled on site.

6.2.1.2 A separate SWMP Close Out Report will be compiled by the Principal Contractor(s) at the end of the construction process that summarises performance of the project against the targets set in the SWMP. The report will identify any deviations from the SMWP and discuss lessons learnt.

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Appendix F – Outline Construction Traffic Management Plan

Hornsea Project Four

Outline Code of Construction Practice - Appendix F Outline Construction Traffic Management Plan

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Glossary

Term	Definition
Commitment	A term used interchangeably with mitigation and enhancement measures. The purpose of Commitments is to reduce and/or eliminate Likely Significant Effects (LSEs), in EIA terms. Primary (Design) or Tertiary (Inherent) are both embedded within the assessment at the relevant point in the EIA (e.g. at Scoping, Preliminary Environmental Information Report (PEIR) or Environmental Statement (ES)). Secondary commitments are incorporated to reduce LSE to environmentally acceptable levels following initial assessment i.e. so that residual effects are acceptable.
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.
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.
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.
Heavy Goods Vehicle (HGV)	HGV is the term for a commercial vehicle with a gross weight over 3.5 tonnes. This assessment also uses the term HGV as a proxy for HGVs, buses and coaches recognising the similar size and environmental characteristics of the respective vehicle types.
Highway authorities	The term highway authorities is used to describe the three highway authorities that are responsible for the roads within the traffic and transport study area. Namely, the East Riding of Yorkshire Council (ERYC), Hull City Council (HCC) and National Highways.
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. Where the offshore cables come ashore east of Fraisthorpe.

Term	Definition
Maximum Design Scenario (MDS)	The maximum design parameters of each Hornsea Four asset (both on and offshore) considered to be a worst case for any given assessment.
National Grid Electricity Transmission (NGET) substation	The grid connection location for Hornsea Four at Creyke Beck.
Onshore substation (OnSS)	Comprises a compound containing the electrical components for transforming the power supplied from Hornsea Project Four to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid. If a HVDC system is used the OnSS will also house equipment to convert the power from HVDC to HVAC.
Order Limits	The limits within which Hornsea Project Four (the 'authorised project') may be carried out.
Orsted Hornsea Project Four Ltd.	The Applicant for the proposed Hornsea Project Four Offshore Wind Farm Development Consent Order (DCO).
Principal Contractor	The Principal Contractor leads the construction phase of Hornsea Four, managing sub-contractors. The Principal Contractor is responsible for the implementation of the final Construction Traffic Management Plan (CTMP).
Two-way movement	A movement is the process of transporting goods from a source location to a predefined destination. A two-way movement represents the inbound (laden trip from source) and the outbound unladen trip (back to source). For example, 20 two-way movements comprise 10 laden trips from source and 10 outbound unladen trips back to source.

Acronyms

Acronym	Definition
CfD	Contract for Difference
CTMP	Construction Traffic Management Plan
CTMPCo	Construction Traffic Management Plan Co-ordinator
DCO	Development Consent Order
EBI	Energy balancing infrastructure
ECC	Onshore Export Cable Corridor
ERYC	East Riding of Yorkshire Council
ES	Environmental Statement
ESDAL	Electronic Service Delivery for Abnormal Loads
HGV	Heavy Goods Vehicle
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MDS	Maximum Design Scenario
MHWS	Mean High Water Spring
MLWS	Mean Low Water Spring
NGET	National Grid Electricity Transmission
OnSS	Onshore Substation
oCoCP	Outline Code of Construction Practice
oCTMP	Outline Construction Traffic Management Plan
PC	Principal Contractor
SRN	Strategic Road Network
TCPA	Town and Country Planning Application
TEMPro	Trip End Model Presentation Program

Units

Acronym	Definition
km	Kilometre(s)
kV	Kilovolt(s)
mph	Miles per hour

1 Introduction

1.1.1.1 Orsted Hornsea Project Four Limited (the 'Applicant') is proposing to develop the Hornsea Project Four Offshore Wind Farm (hereafter 'Hornsea Four'). Hornsea Four will be located approximately 69 km offshore the East Riding of Yorkshire in the Southern North Sea and will be the fourth project to be developed in the former Hornsea Zone. Hornsea Four will include both offshore and onshore infrastructure including an offshore generating station (wind farm), export cables to landfall and on to an onshore substation (OnSS) with energy balancing infrastructure (EBI), and connection to the electricity transmission network.

1.1.1.2 Details of the activities and infrastructure associated with Hornsea Four are fully set out in **Volume A1, Chapter 4: Project Description**. In summary, the onshore elements of Hornsea Four will comprise of:

- **Landfall** – including transition joint bays connecting the offshore export cable corridor (ECC) and onshore ECC, one temporary landfall compound and temporary access tracks;
- **Onshore ECC** – including the onshore export cables, eight temporary logistics compounds, joint bays and link boxes, and temporary access tracks;
- **OnSS and EBI** – including the temporary working area, temporary and permanent access tracks, the permanent working area (inclusive of the OnSS, EBI and associated landscaping and attenuation feature); and,
- **400 kV National Grid Electricity Transmission (NGET) connection area** – the area within which a 400 kV section of the onshore ECC will connect to the existing National Grid Electricity Transmission (NGET) substation at Creyke Beck.

1.1.1.3 The zone of influence of the traffic and transport effects associated with Hornsea Four extends to the administration areas of the East Riding of Yorkshire and Hull City Council and the Strategic Road Network (SRN) is managed by Highways England (now National Highways).

1.2 Purpose of the Outline CTMP

1.2.1.1 This Outline Construction Traffic Management Plan (oCTMP) will form the basis for a final CTMP, which will be prepared and submitted prior to the commencement of construction of the connection works for approval by the relevant highway authorities, i.e. East Riding of Yorkshire Council (ERYC), National Highways and Hull City Council (referred to hereafter as the highway authorities). This is supported by inclusion of Requirement 18 of the draft Development Consent Order (DCO) which states:

> ***18.—(1)*** *No stage of the connection works may commence until written details of a construction traffic management plan (which accords with the outline construction traffic management plan) for that stage of the connection works has been submitted to and approved in writing by the relevant planning authority in consultation with the relevant highway authority.*
> ***(2)*** *The construction traffic management plan must be implemented as approved.*

1.2.1.2 For those Access Points that require HGVs to utilise routes with railway level crossings, the relevant sections of the final CTMP will be submitted to Network Rail for approval prior to the Requirement discharge submission to the relevant highways authorities.

1.2.1.3 The final CTMP will set standards and procedures for:

- Managing the numbers and routeing of Heavy Goods Vehicles (HGVs) during the construction phase;
- Managing the movement of employee traffic during the construction phase;
- Details of localised road improvements necessary to facilitate safe use of the existing road network; and
- Detail of measures to manage the safe passage of HGV traffic via the local highway network.

1.2.1.4 This oCTMP also includes a suite of access and road crossing design concepts and details of the proposed technical approvals process. At this stage it is proposed that the final technical approvals for the access and crossing designs would be included within the final CTMP (discharging Requirement 18 and 11). However, access and road crossing approvals could be independent of the final CTMP whilst still meeting the stipulations of Requirement 11 of the draft Development Consent Order (DCO) which states:

> ***11.—(1)*** *Construction of any new permanent or temporary means of access to a highway, or alteration, or use of an existing means of access to a highway, shall not commence until an access plan for that access has been submitted to and approved by the relevant highway authority.*
>
> ***(2)*** *The access plan must include details of the siting, design, layout, visibility splays, access management measures and a maintenance programme relevant to the access it relates to.*
>
> ***(3)*** *The highway accesses (including visibility splays) must be constructed and maintained in accordance with the approved details.*

1.2.1.5 This oCTMP is provided as an appendix to the outline Code of Construction Practice (oCoCP) (**F2.2: Outline Code of Construction Practice**).

1.2.1.6 Hornsea Four will adopt a staged approach to the approval of DCO requirements enabling requirements to be approved in part or in whole prior to the commencement of the relevant stage of works according to whether a staged approach is to be taken to construction of the works in question. This approach will be governed by the inclusion of Requirement 27 within the draft DCO which requires a written scheme setting out the stages of construction to be approved prior to the commencement of the authorised development. The Construction Staging Scheme must be approved by the relevant Planning Authority in respect of the onshore connection works and by the MMO in relation to authorised works seaward of MHWS.

1.2.1.7 The Construction Staging Scheme will detail the stages of construction and the timing of approval of relevant DCO requirements with respect to the relevant construction stages identified within the scheme.

(1) *The authorised development may not be commenced until a written scheme setting out the stages of construction of the authorised development has been submitted to and approved by the relevant planning authority, in relation to the connection works, or the MMO, in relation to works seaward of MHWS.*

(2) *The stages of construction referred to in sub-paragraph (1) shall not permit the authorised development to be constructed in more than one overall phase.*

(3) *The scheme must be implemented as approved.*

1.3 oCTMP Scope

1.3.1.1 This oCTMP contains the control measures and monitoring procedures for managing the potential traffic and transport impacts of constructing Hornsea Four. The objective of this oCTMP is to define a strategy to ensure that the construction traffic parameters (e.g. traffic numbers and routes) assessed within the ES (**Volume A3, Chapter 7: Traffic and Transport**). are managed and not exceeded.

1.3.1.2 The scope of this oCTMP does not extend to the base port to be utilised for offshore construction and maintenance of Hornsea Four. The Applicant is currently considering ports suitable for the construction base for the offshore elements of Hornsea Four, but no decision has been made at this time over which to utilise. A wide area across the southern North Sea is being considered including ports such as Grimsby, Immingham, Hull, Felixstowe and Teesside. Other ports in the area may also be suitable for the construction port. Port selection will be dependent upon, and only take place following, grant of development consent for Hornsea Four, and on the findings of further technical studies and commercial negotiations which are informed by the DCO. As such, the DCO application for Hornsea Four does not seek development consent for activities at potential construction ports. Where necessary, any such development activity would be subject to separate consent(s) such as a planning permission or a Harbour Revision Order and would therefore be subject to a separate transport assessment and/or construction traffic management plan.

1.4 oCTMP Consultation

1.4.1.1 A draft version of the oCTMP was shared with the highway authorities for comment. A summary of the key issues raised is outlined in Table 1 together with a commentary upon how these issues have been considered in the production of this final oCTMP.

Table 1: oCTMP Consultation Responses.

Consultee	Date, Document, Forum	Comment / Discussion Point	Where addressed in the oCTMP
ERYC	2 October 2019, Meeting with ERYC - Post-PEIR	The ERYC requested detail regarding the controls that would be implemented to prevent overspill parking on the public highway.	It was agreed with ERYC that parking controls would be set out within the oCTMP (ON-HUM-3.9). Section 4.7 provides details of the proposed parking and loading controls.
	29 April 2020, Meeting with ERYC to discuss the draft oCTMP	ERYC confirmed that they were happy with the content of the draft oCTMP but requested that the final oCTMP also include detail of measures control the deposition of detritus on the public highway. In addition, the ERYC also advised that they typically use Section 62 rather than Section 278 of the Highways Act (1980) for the technical approval of highway works.	Section 4.2 provides details of the proposed measures to manage the deposition of detritus on the public highway. Section 4.3 and 4.4 outline that the technical approvals will be submitted to and agreed with ERYC under Section 62 of the Highways Act (1980) or equivalent provisions under the DCO.
Hull City Council (HCC)	30 April and 7 May 2020, Meetings with HCC to discuss the draft oCTMP	HCC raised concerns that the proposals to consider driver delay within the final CTMP did not extend to key junctions within the HCC administration area. HCC therefore requested that the oCTMP be updated to include a commitment to undertaking further assessment of (and where necessary mitigating) the potential driver delay impacts at all critical junctions along the A1033 and A165 within the HCC administration area.	Section 4.5 includes details of the junctions that will be subject to further assessment as part of the final CTMP.
		HCC also raised concerns that HGVs may not use the main A roads and could instead use less suitable local roads. The Applicant directed HCC to a series of measures and control processes within the oCTMP to control HGV routeing. HCC requested that these measures be strengthened by the commitment to ensuring all HGVs are	Section 2 includes details of the proposed measures to ensure HGVs use the agreed routes and Section 5 includes details of measures for monitoring compliance.

Consultee	Date, Document, Forum	Comment / Discussion Point	Where addressed in the oCTMP
		fitted with GPS tracking. The Applicant advised that this may not be practicable and as such it was agreed that HCC would further review this requirement (as part of their review of final CTMP) once final details of the distribution of HGV traffic is known.	
Highways England (now National Highways)	7 May 2020, Technical Memorandum provided in response to the draft oCTMP	Highways England raised a number of comments within a Technical Memorandum with regards to information that they would wish to see within the final CTMP. The following outlines the edits that Highways England will require the final CTMP to address:	The following outlines where the oCTMP has been updated to address Highways England's comments or where further information may be required to accompany the final CTMP.
		• clarify whether the peak daily two-way HGV movements will be occurring at each site access over the same period simultaneously or over individual respective peak periods per site.	Section 2.2 of the oCTMP clarifies that as a Maximum design Scenario (MDS) is assumed that all movements would occur simultaneously.
		• clarify as to which specific HGV routing will be utilised for each respective site access.	Section 2.3.3 of the oCTMP includes details of the routes that HGVs would be permitted to use and the measures that would be proposed to ensure these routes are communicated to drivers.
		• provide a monthly / seasonal breakdown as to when the peak HGV two-way flow associated with each respective site access is anticipated.	Section 2.3.1 outlines that the final CTMP will be updated to include details of the forecast monthly HGV movements.
		• clarify the daily arrival / departure profile of HGV movements per construction site.	Section 2.3.1 outlines that the final CTMP will be updated to include an indicative profile for daily deliveries.
		• Clarification should be provided as to how Table 1 of the OCTMP corresponds with Table 7.17 (Existing and proposed daily traffic flows) of the Preliminary Environmental Information Report- Volume 3: Chapter &: Traffic and Transport, given the apparent discrepancy in peak construction flows between both tables.	Table 1 of the oCTMP (now Table 3) presents a disaggregation of the MDS of the total 838 two-way daily HGV movements to each access. Table 7.17 (now Table 7.17) of Volume A3, Chapter 7: Traffic and Transport presents these peak 838 two-way daily HGV movements when assigned to the highway links, as such it is not possible to directly

Consultee	Date, Document, Forum	Comment / Discussion Point	Where addressed in the oCTMP
			compare the two tables. It should also be noted that the construction traffic numbers referred to by Highways England (presented at PEIR (Orsted 2019)) have reduced for the DCO submission.
		• contains details as to appropriate parking facilities for HGV drivers, ensuring that impromptu parking is undertaken at appropriate and safe locations with sufficient capacity for HGVs. This is to ensure that HGV drivers do not undertake ad hoc parking at inappropriate or unsafe locations on the SRN.	Section 2.3.2 includes a commitment to identify appropriate and safe parking locations and agree these with the relevant highway authority (as part of the final CTMP) prior to the commencement of the relevant parts of the connection works. Section 2.3.3 includes details of how these locations will be communicated to drivers.
		• identify the anticipated personnel routings, in addition to detailing which specific routing will be utilised for each respective site access.	Section 4.5 includes the commitment to provide further details of traffic flows through sensitive junctions to the highway authorities and where necessary to undertake further assessment.
		• provide a monthly / seasonal breakdown as to when the peak personnel two-way flow associated with each respective site access is anticipated.	
		• clarify the daily arrival / departure profile of personnel movements per construction site.	
		• clarify the anticipated distribution of personnel trips to the site.	
		• Construction trip generation flows should be confirmed with Highways England before any detailed junction modelling is undertaken.	
		• Further detail should be provided as to the measures that will be implemented by the CTMPCo should any HGV and / or personnel movements exceed subsequently agreed flow thresholds.	Section 5.3 includes details of measures to address non-compliances including exceedance of the target daily vehicle numbers.
		• Given the relatively short-term nature of the construction phase proposed, it is not anticipated by CH2M that a	Section 4.5 includes details of the junctions that will be subject to further assessment as part of the

Consultee	Date, Document, Forum	Comment / Discussion Point	Where addressed in the oCTMP
		significant impact will be incurred on the functionality or operation of the SRN, however, the Humber Bridge Roundabout (A15 / Boothferry Road / A164) may require closer analysis as to the anticipated impact of construction traffic at this junction.	final CTMP. This includes the Humber Bridge Roundabout (A15 / Boothferry Road / A164).
Highways England (now National Highways)	19 May 2021, Draft oCTMP submitted for comment via email	A draft copy of the oCTMP was shared with Highways England. Highways England have agreed the CTMP is appropriate to control impacts but requested that the oCTMP be amended to include further details of the information that will be submitted within the final CTMP to inform an assessment of the potential capacity and road safety impacts.	Section 4.5 includes details of the information that will be submitted to Highways England to inform the potential requirement for further road safety and capacity analysis.

1.5 CTMP Governance

1.5.1.1 Prior to the commencement of the relevant part of the construction works associated with Hornsea Four, a CTMP Co-ordinator (CTMPCo) will be appointed by the Principal Contractor. Their key responsibilities will include:

- Managing the implementation of the approved CTMP;
- Collating monitoring data and preparing monitoring report (as outlined in Section 5);
- Acting as a point of contact for the local community; and
- Acting as a point of contact for construction workers and sub-contractors.

1.5.1.2 The CTMPCo will be assisted in their role by the Environmental Manager (nominated by the Applicant).

1.5.1.3 To ensure clarity of the responsibilities of the oCTMP, its governance structure is set out in Figure 1.

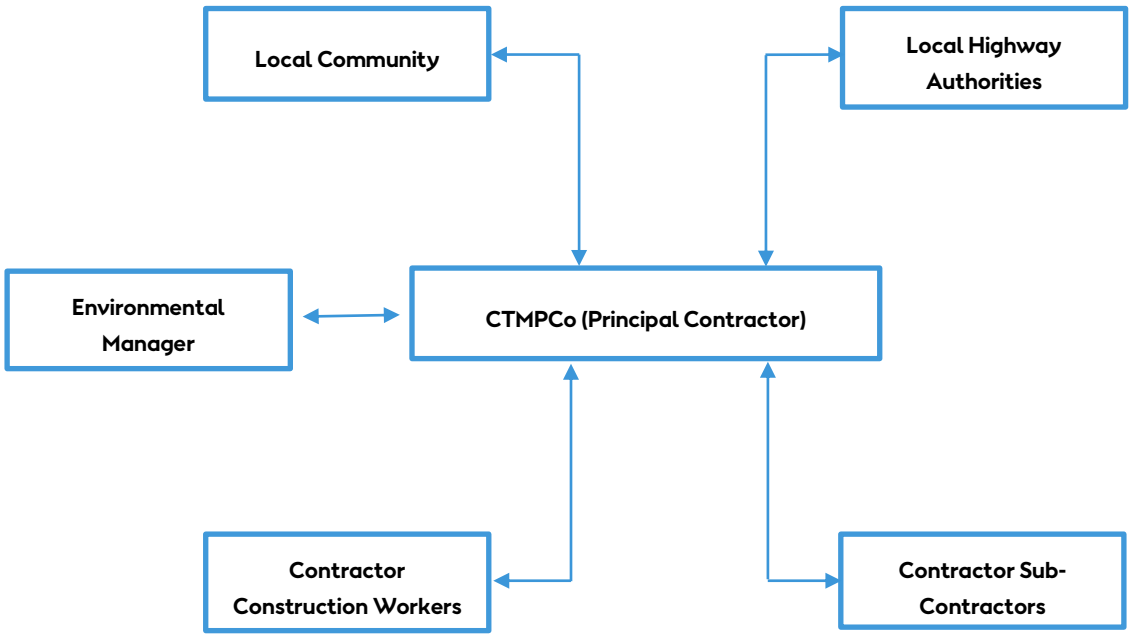


Figure 1: CTMP Governance Structure

1.5.1.4 Full details of all the responsibilities of the CTMPCo and Environmental Manager and associated timescales are provided as an Action Plan in Section 5.4 of this document. Contact details for the CTMPCo and Environmental Manager will be submitted to the highway authorities for their records prior to commencement of the relevant works.

1.6 Structure of the oCTMP

1.6.1.1 Following this introduction, the structure of the oCTMP is as follows:

- Section 2 defines a target and measures to manage HGV demand;
- Section 3 defines a target and measures to manage employee traffic demand;
- Section 4 sets out access and traffic management proposals; and
- Section 5 sets-out how the oCTMP will be monitored and provides an Action Plan for its implementation.

1.7 oCTMP Commitments

1.7.1.1 The Applicant has developed a range of Commitments to eliminate or reduce impacts and effects. All Commitments identified for Hornsea Four are detailed within the Commitments Register (see Volume A4, Annex 5.2: Commitments Register).

1.7.1.2 The Commitments Register includes a number of commitments secured by the oCTMP, these are listed in Table 2.

Table 2: Outline CTMP Commitments.

Commitments ID	Measure Proposed	How the measure will be secured
Co62	Secondary: Temporary access points off the highway will be installed to facilitate vehicular access from the road, and into the onshore cable corridor during construction. The access points will be constructed in line with the local authorities' requirements, relevant appropriate standards and in accordance with the principles established in the Outline Construction Traffic and Travel Management Plan.	DCO Requirement 18 (CTMP); and Access to Works Plans
Co135	Primary: Temporary construction highway access points along the onshore export cable corridor (ECC) will be located at least 150 m from residential receptors, with the exception of three receptors: Bridge Farm Holiday Cottages; Arms Farm and Elm Tree Farm, in Brigham, Driffield.	DCO Requirement 18 (CTMP)
Co137	Tertiary: HGV movements associated with operation and planned maintenance of the onshore infrastructure will operate only between the hours of 0700 – 2300. HGV movements may however be subject to unscheduled maintenance activities outside these hours. In this event the council will be informed via writing.	
Co144	Tertiary: A Construction Traffic Management Plan (CTMP) will be developed in accordance with the outline CTMP to be submitted with the DCO application. The CTMP will set standards and procedures for: 1. Managing the numbers and routing of HGVs during the construction phase; 2. Managing the movement of employee traffic during the construction phase; 3. Details of localised road improvements necessary to facilitate safe use of the existing road network; and 4. 4. Details of measures to manage the safe passage of HGV traffic via the local highway network.	
Co150	Primary: A new temporary and permanent access for the onshore substation, and temporary construction access for the onshore export cable corridor will be taken directly from the A1079, to route construction and operation and maintenance traffic away from Cottingham and Dunswell.	
Co171	Secondary: HGVs will avoid travel through Foston on the Wolds.	

2 Control of HGV Movements

2.1 Introduction

2.1.1.1 Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport** has assessed the environmental impact of construction traffic on routes within the traffic and transport study area across a range of effects, namely:

- Driver Delay;
- Severance;
- Pedestrian Amenity;
- Accidents and Road Safety; and
- Abnormal Loads (associated with OnSS components).

2.1.1.2 The oCTMP seeks to ensure that the construction traffic parameters (e.g. traffic numbers and routes) assessed within the ES are managed and not exceeded. The ES assessment concluded that appropriate CTMP measures will ensure that the environmental impacts will not be 'significant' in EIA terms.

2.1.1.3 This oCTMP provides a level of detail as to the traffic management measures that will be implemented to control HGV movements during the construction phase. In doing so, the oCTMP will set the management measures and performance required of the Principal Contractor. These measures are an absolute requirement established from the parameters outlined in Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport**, to be adopted by the appointed Principal Contractor and only revised with the prior agreement of the highway authorities.

2.2 HGV Traffic Generation

2.2.1.1 Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport** sets out the forecast number of construction HGVs associated with each of the accesses (the location of these accesses is shown in **Figure 2**. The Maximum Design Scenario (MDS) considered within **Volume A3, Chapter 7: Traffic and Transport** has been developed on the basis of the peak HGV movements travelling to each access concurrently.

2.2.1.2 The resultant peak daily two-way HGV movements assigned to the accesses are summarised in **Table 3**.

Table 3: Peak Daily Two-way HGV Movements per Access.

Access	Peak daily two-way HGV movements
AP_002 & AP_003	93
AP_040	28
AP_004	51
AP_005 & AP_039	15
AP_006	23
AP_007	19

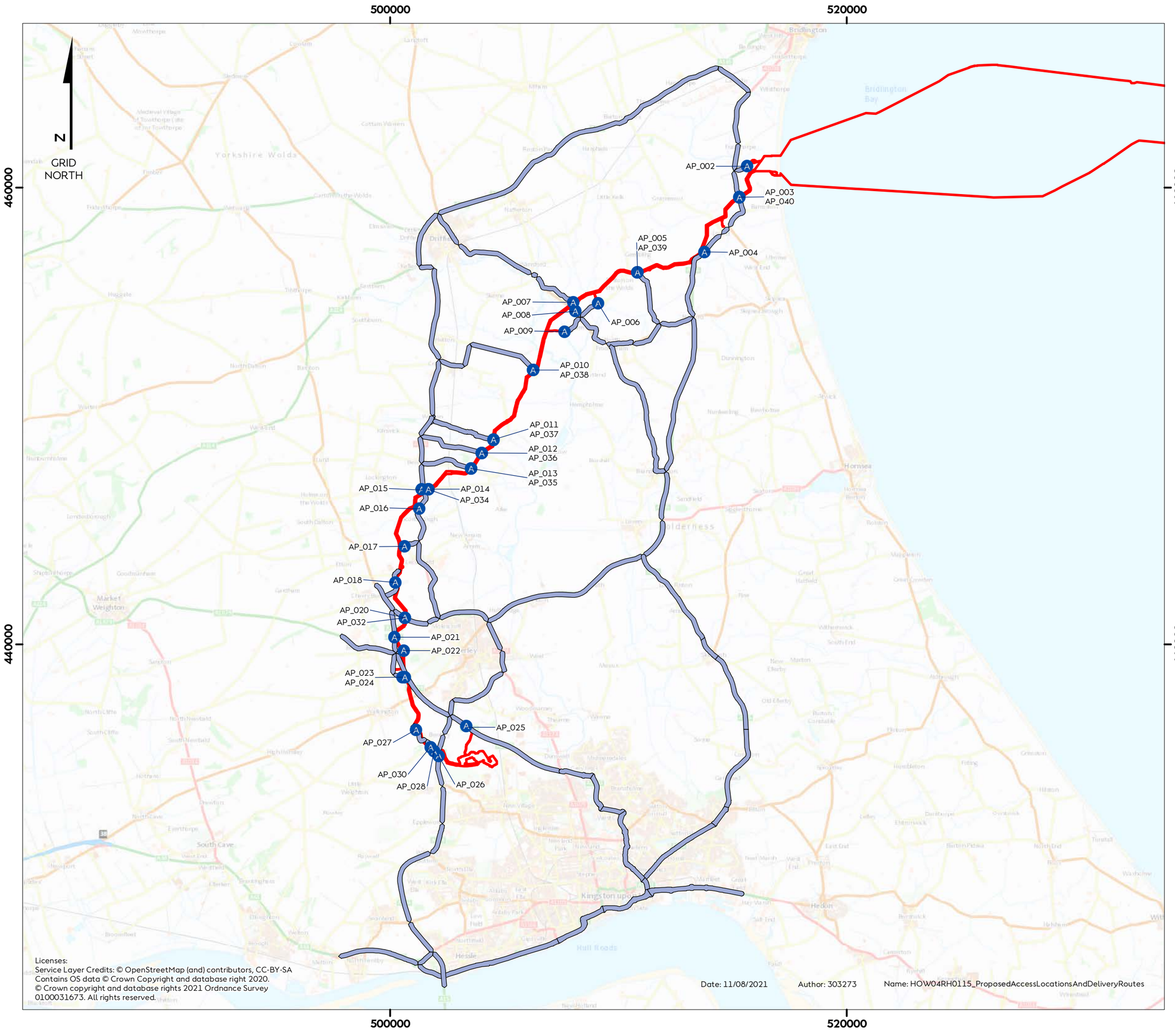
Access	Peak daily two-way HGV movements
AP_008	8
AP_009	19
AP_010 & AP_038	32
AP_011 & AP_037	25
AP_012 & AP_036	12
AP_013 & AP_035	16
AP_014 & AP_034	14
AP_015	67
AP_016	11
AP_017	35
AP_018	11
AP_020 & AP_032	15
AP_021	18
AP_022	20
AP_023 & AP_024	24
AP_025	244
AP_026	6
AP_027	12
AP_028 & AP_030	21
Total	**838**

2.2.1.3 The HGV numbers detailed in **Table 3** form the bounds of the traffic and transport EIA assessments (Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport**).

Hornsea Four

Figure 2

Proposed Access Locations and Delivery Routes



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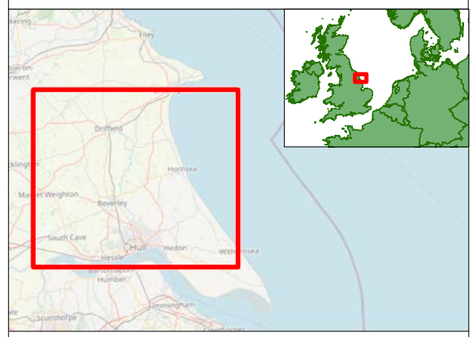
Date: 11/08/2021 Author: 303273 Name: HOW04RH0115_ProposedAccessLocationsAndDeliveryRoutes

- Order Limits
- Proposed Access Point
- Proposed Delivery Routes



Coordinate system: British National Grid

Scale@A3: 1:160,000

0 2 4 8 Kilometres

0 1 2 4 Miles

REV	REMARK	DATE
	First Issue for DCO	11/08/2021

Title: Proposed Access Locations and Delivery Routes
Document no: HOW04RH0115
Created by: AZ
Checked by: ST
Approved by: PS

Royal HaskoningDHV

Ørsted

2.3 Measures

2.3.1 HGV Numbers

2.3.1.1 To ensure compliance with the assessed MDS for HGV movements (Table 3), a booking system for deliveries will be established by the CTMPCo. The booking system will enable a daily profile of deliveries to be maintained and allow the CTMPCo to ensure that the required deliveries are regularly forecast and planned.

2.3.1.2 To provide the highway authorities with an indication of when peak deliveries may occur within the construction programme, the final CTMP(s) will also be updated to include indicative profiles for:

- monthly deliveries per access for the construction duration; and
- the daily profile of deliveries per access.

2.3.1.3 The assessment of pedestrian amenity effects (TT-C-7) outlined within the ES identified adverse impacts prior to mitigation associated with an increase in HGV traffic via the B1249 (through the village of Beeford) travelling to accesses AP_005 to AP_009 and AP_039. The location of these accesses is shown in Figure 2.

2.3.1.4 In order to mitigate this impact, further mitigation is proposed to limit the peak daily HGV movements through Beeford from 84 to 23 two-way HGV movements per day. This limit would be assisted through the exploration of opportunities to further reduce the overall number of HGV movements by consolidating loads and using the largest feasible vehicles appropriate to the road network. With the introduction of the mitigation measures outlined above, no significant residual pedestrian amenity effects were identified.

2.3.1.5 The CTMPCo will be required to plan for maintaining stockpiles of critical path items such as aggregate. These stockpiles will facilitate advanced planning of deliveries, maximise payloads, and enable a smooth import profile to be maintained.

2.3.2 HGV Timings

2.3.2.1 Commitment Co36 (detailed within Volume A4, Annex 5.2: Commitment Register) outlines the core working hours for the construction of the onshore components of Hornsea Four will be as follows:

- Monday to Friday: 07:00 - 18:00 hours;
- Saturday: 07:00 - 13:00 hours;
- Up to one hour before and after core working hours for mobilisation ("mobilisation period"), i.e. 06:00 to 19:00 weekdays and 06:00 to 14:00 Saturdays; and
- Maintenance period 13:00 to 17:00 Saturdays.

2.3.2.2 Outside of core hours, during the mobilisation period, the contractor may undertake the following activities:

- Arrival and departure of the workforce at the site and movement to and from areas across the project;
- Site inspections and safety checks; site meetings (briefings and quiet inspections/walkovers);
- Site clean-up (site housekeeping that does not require the use of plant); and
- Low-key maintenance, safety checking of plan and machinery (provided this does not require or cause hammering or banging).

2.3.2.3 HGV access to the onshore components of Hornsea Four will be limited to the core working hours. This does not preclude HGV travel to and from the onshore components of Hornsea Four via the wider highway network which may occur during the mobilisation hours.

2.3.2.4 Any HGVs which are projected to arrive on site outside of core working hours would be required to park at an appropriate lorry park, services and other designated overnight parking locations until they can complete their journey within appropriate restrictions. These locations would be agreed with the relevant highway authorities prior to the commencement of the relevant part of the connection works and would be communicated to drivers within their delivery instructions (outlined within **Section 2.3.3**).

2.3.2.5 In certain circumstances, specific works may have to be undertaken outside of core working hours, which would involve ERYC being informed in writing.

2.3.2.6 The assessment of pedestrian amenity effects (TT-C-7) outlined within the ES identified adverse impacts prior to mitigation associated with an increase in HGV traffic via the B1249 (through the village of Beeford). In addition to the mitigation outlined within **Section 2.3.1** to limit the number of daily HGV movements, further mitigation is also proposed to avoid deliveries through Beeford during school start and finish times. The exact hours to be avoided will be agreed as part of the final CTMP with ERYC prior to the commencement of the relevant part of the connection works. With the introduction of the mitigation measures outlined above, no significant residual pedestrian amenity effects were identified. No further restriction upon delivery times are proposed for any other road links.

2.3.3 Control of HGV Routes

2.3.3.1 The proposed HGV routes to each access will be limited to the assessed links within the ES as shown in **Figure 2**. To ensure compliance with the HGV delivery routes, the following measures are proposed:

- Direction signing will be implemented to direct construction traffic to the respective accesses along the assessed delivery routes (the location and design of these signs will be agreed with the relevant highway authority prior to the commencement of the relevant part of the connection works);

- Information signs will be erected which will include a telephone number for the public to report concerns;
- The delivery routes will be communicated by the CTMPCo to all companies and/or drivers involved in the transport of materials and plant to and from site by HGV construction vehicle;
- The registration numbers for all HGVs making deliveries will be recorded by the CTMPCo. This will allow for checking and enforcement of any reported breaches of the agreed delivery routes; and
- The CTMPCo will provide an 'identifier' that will be placed within the window of all delivery vehicles to enable residents to identify if an HGV is engaged on work on Hornsea Four and will be submitted to and approved by the highway authorities as part of the final CTMP.

2.3.3.2 To support the strategy to control HGV routes, each driver would be issued with a delivery pack. This pack would be a convenient size so that it can be stored in the truck cab and include the following information:

- A plan showing the delivery routes and the location of the site access;
- Details of appropriate lorry park, services and other designated overnight parking locations where drivers would be permitted to stop;
- A copy of the identifier to display in the trucks window;
- Details of restrictions on delivery hours (set out in **Section 2.3.2** of this document);
- Details of delivery routes that cross level crossings, general safety guidance (e.g. complying with the crossing lights) and any site specific safety instructions;
- Details of locations where it is necessary for drivers of large (typically over 18.75 m long, 2.9 m in width or 44 tonnes total weight) or slow-moving vehicles (typically less than five mile per hour) to phone Network Rail and get permission to cross a level crossing; and
- Details of disciplinary measures for non-compliance (set out in **Section 5** of this document).

2.3.3.3 Prior to the commencement of the Authorised Development the CTMPCo shall agree with Network Rail a Safety Brief in respect of the use of Wansford Road Level Crossing (Link 24) by HGV Construction Vehicles and shall ensure that the agreed Safety Brief is implemented and complied with at all times during the construction of the Authorised Development.

2.3.3.4 Safety Brief means a document that describes:

- The liaison that will take place between the undertaker, contractors and Network Rail to enable an assessment to be carried out as to the measures that need to be agreed and complied with to enable the safe use of the crossing by Construction Vehicles and the liaison shall include a site visit to be attended by the Environmental Manager and / or the CTMPCo.
- The measures that the undertaker and its contractors will comply with in relation to the use of the crossing by Construction Vehicles.
- Any special measures that need to be put in place in relation to vehicles falling within the Road Vehicles (Authorisation of Special Types) (General) Order 2003.
- A procedure for monitoring and reporting on compliance with the agreed measures.
- A protocol for the training of drivers of HGVs on how to use the crossing safely.

2.3.3.5 Compliance with the agreed HGV delivery routes and associated measures will be subject to the monitoring and enforcement measures set out in **Section 5** of this document.

2.3.4 HGV Emissions

2.3.4.1 To ensure that the emissions of HGVs are minimised so far as reasonably practicable, the CTMPCo will ensure that HGVs are of a Euro 6[1] standard (where practicable and where specific specialised operations will allow).

2.3.5 Driver Inductions and Road Safety

2.3.5.1 All HGV drivers for Hornsea Four will be formally inducted. The induction will establish a clear set of responsibilities that all drivers will be required to follow, such as:

- Timings, pre-booked slots;
- Clarification of approved HGV routes;
- Highway safety concerns;
- Information upon how to safely traverse level crossings;
- Adherence to speed limits; and
- Details of reporting accidents and 'near misses'.

2.3.6 Abnormal Loads

2.3.6.1 The movement of Abnormal Loads will be outside of the restrictions (identified routes, times) contained within this oCTMP and will be subject to separate liaison with the highway authorities and police through the Electronic Service Delivery for Abnormal Loads (ESDAL) system.

2.3.6.2 The CTMPCo will notify the highways authority and police through ESDAL and agree appropriate timings and routes appropriate to the type of load.

2.3.6.3 In addition to notifying the highway authority and police through ESDAL, the CTMPCo will also ensure that where Abnormal Load vehicles are required to traverse over level crossings, the following measures are adopted:

- The abnormal load vehicle is escorted over the level crossing by an escort vehicle; and
- Where drivers are required to phone and get permission to cross a level crossing (as indicated by road signs), that drivers are informed as part of their induction (**Section 2.3.5**) and their delivery instructions (**Section 2.3.3**).

[1] *A European emission standard that defines acceptable limits for exhaust emissions of new vehicles sold in the European Union.*

3 Control of Personnel Movements

3.1 Background

3.1.1.1 Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport** assessed a MDS of all employees travelling by car on their own (i.e. single occupancy). No allowance for employees to car-share or use other sustainable modes of transport were applied to the assessment. This oCTMP sets out measures to promote the adoption of sustainable travel by the construction personnel, with the objective to reduce employee car demand.

3.1.1.2 It is proposed that the oCTMP personnel travel objectives are achieved by focussing on a series of 'input' measures, supported by a monitored action plan.

3.2 Measures

3.2.1 Personnel Vehicle Numbers

3.2.1.1 In order to reduce the number of single vehicle occupancy trips, **Table 4** provides details of the key measures that have been identified to achieve this, along with the rationale for their adoption.

Table 4: Personnel Travel Plan Measures.

Measure	Rationale
Identify car-share, pickup locations	The CTMPCo will identify and group employees who are in nearby accommodation and explore opportunities for car-sharing including the assignment of crew vans and designated drivers.
Drivers required to park within designated areas	All drivers will be required to park within designated areas. Drivers not parking within the designated areas, will be subject to enforcement action as set out in **Section 5.3** of this document.
Walking/ cycle facilities	It is recognised that the transient nature of the construction workforce will reduce the potential opportunities for walking and cycling. However, the CTMPCo will encourage employees to walk and cycle by providing changing facilities and secure cycle parking. The level of cycle parking requirements will be established by the CTMPCo based upon personnel origins and reviewed throughout construction.
Guaranteed lift home	To allow personnel who car-share to get home in an emergency, a guaranteed lift home will be offered.
Staff noticeboard	Staff notice boards will be provided within communal areas, these will include details of the car-sharing options including details of parking requirements and the guaranteed lift home. The notice boards will also include details of local walking and cycling routes and bus and train times (where options exist).
Welfare and catering facilities	To avoid the need for employees to drive off site during the working day, the CTMPCo will seek to encourage local suppliers (e.g. a sandwich van) to deliver to site.

3.2.2 Personnel Vehicle Timings

3.2.2.1 Commitment Co36 (detailed within **Volume A4, Annex 5.2: Commitment Register**) outlines the core working hours for the construction of the onshore components of Hornsea Four will be as follows:

- Monday to Friday: 07:00 - 18:00 hours;
- Saturday: 07:00 - 13:00 hours;
- Up to one hour before and after core working hours for mobilisation ("mobilisation period"), i.e. 06:00 to 19:00 weekdays and 06:00 to 14:00 Saturdays; and
- Maintenance period 13:00 to 17:00 Saturdays.

3.2.2.2 Personnel access to the onshore components of Hornsea Four will be limited to these core working hours. This does not preclude personnel traveling to and from the onshore components of Hornsea Four via the wider highway network outside of these core hours.

3.2.2.3 In certain circumstances, specific works may have to be undertaken outside of core working hours, which would involve ERYC being informed in writing.

4 Traffic Management

4.1 Introduction

4.1.1.1 This section sets out the processes for managing the interaction between construction traffic and the existing highway users.

4.2 Control of Material on the Highway

4.2.1.1 To prevent detritus and other material being deposited on the public highway the CTMPCo will be required to implement a series of measures. Prior to the commencement of the relevant parts of the connection works, the details of the measures that will be used for each access will be submitted to and agreed with ERYC.

4.2.1.2 It is envisaged that as a minimum, measures would include the following:

- Undertaking regular inspections (at least daily) of the public highway in the vicinity of the active site accesses to ensure cleanliness; and
- Having road sweepers on call to clear any detritus and other material from the public highway.

4.2.1.3 In addition, where deliveries are likely to be more intense, such as at logistics compounds, further measures such as wheel washing facilities may also be provided.

4.2.1.4 Prior to the commencement of the relevant parts of the connection works, the CTMPCo will also provide ERYC with a contact point so that ERYC can raise any reports with regards to detritus and other material directly with the Principal Contractor.

4.3 Accesses and Road Crossings

4.3.1.1 A suite of access and road crossing design concepts have been developed for Hornsea Four and are detailed within **Volume A6, Annex 7.1: Traffic and Transport Technical Report**. It has been agreed with ERYC (at a meeting on the 1 May 2019 that these outline access concepts will be updated post consent as part of the final CTMP(s) (ON-HUM-3.8).

4.3.1.2 Prior to the commencement of the relevant parts of the connection works, the technical approvals for the access and crossing designs will be submitted to and agreed with ERYC under Section 62 of the Highways Act (1980) or equivalent provisions under the DCO (e.g. DCO Requirement 11). The technical approval process will include submission of finalised drawings, showing full details of access and crossing improvements, including drainage, lighting, signing, and standard construction details.

4.3.1.3 All accesses and crossings identified for construction are temporary and following completion of construction works will be reinstated to their former state unless otherwise agreed with ERYC and the relevant landowner. The exception to this would be the access to the OnSS and EBI (access AP_025) which will remain in-situ for operation and maintenance of the OnSS and EBI. It is noted that operational accesses have been identified at landfall and the onshore ECC in which permanent easement is sought. These accesses do not require any construction works and consist only of land access rights. Accesses identified for both construction and operation will be reinstated after construction (unless otherwise agreed with ERYC and the relevant landowner).

4.3.1.4 The technical approval documentation will also include a Stage 1/2 Road Safety Audit and designer's response.

4.3.1.5 In addition to the powers set out in the draft DCO, relevant powers under the Road Traffic Regulation Act (1984) will also be relied upon to implement any temporary speed limit changes required.

4.3.1.6 In order to construct each of the accesses and crossings temporary traffic management will be implemented to maintain highway safety and to ensure minimal delays to existing road users. Prior to the commencement of the relevant part of the connection works details of traffic management at accesses and crossings will be developed by the CTMPCo in liaison with ERYC and outlined within the final CTMP(s).

4.4 Access Management Measures

4.4.1.1 Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport** assessed the impact of increases in construction traffic upon Driver delay – Local roads (TT-C, TT-C-5). The assessment identified 12 roads within the traffic and transport study area of substandard width which will prevent two HGVs from passing, potentially impacting on driver delay.

4.4.1.2 The ES set out a range of mitigation measures that could be adopted including, road/ junction widening, formalising existing informal passing places or using an escort vehicle to

guide HGVs along roads and past oncoming traffic. It is proposed that prior to the commencement of the relevant part of the connection works, the CTMPCo will formalise and agree the measures to be adopted for each road.

4.4.1.3 Where road/junction widening is proposed, the technical approvals for the designs will be submitted to and agreed with ERYC under Article 14 of the Order.

4.4.1.4 The technical approval process will include submission of finalised drawings, showing full details of the improvements, including drainage, lighting, signing, and standard construction details.

4.4.1.5 All road/junction widening are proposed to be temporary and following completion of construction will be reinstated to their former state unless otherwise agreed with ERYC and the relevant landowner.

4.4.1.6 The technical approval documentation will also include a Stage 1/2 Road Safety Audit and designer's response.

4.4.1.7 Whilst the project provides for HDD under all public highways, if works are required on the public highway (such as trial holes to identify local utilities) the project will make use of shuttle working arrangements. Shuttle working is where one direction of travel receives priority over the other through the use of traffic control. The final form of traffic control (traffic signals, stop-go boards, give-take) would be agreed with the ERYC.

4.5 Junction Assessment

4.5.1.1 Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport** identified 27 junctions as being potentially sensitive to changes in traffic.

4.5.1.2 It has been agreed with the highway authorities that rather than undertaking detailed junction capacity modelling for the DCO application submission, it would be appropriate to defer any assessment until a Principal Contractor is appointed (ON-HUM-2.5). Highways England have also requested that as well as considering capacity impacts, a more detailed assessment of the impacts upon road safety for all junctions on the SRN should be undertaken.

4.5.1.3 In addition, it has also been agreed with HCC that for junctions 13 – 27 there would also be a requirement to consider noise and air quality impacts if deemed necessary, acknowledging relevant assessment accompany the DCO application.

4.5.1.4 Detailed information regarding forecast traffic flows for each junction will be provided to the respective highway authorities once a Principal Contractor is appointed and greater certainty is available with regards to the following variables:

- A construction programme providing details of monthly breakdown of HGV and employee demand throughout construction;

- Details of the peak and average HGV movements;
- Details of the peak and average employee movements;
- The modes of travel to be used by employees, i.e. the anticipated proportion that would use public transport, car-share, etc;
- Details of the origin and destination of employees and HGV traffic;
- Proposed HGV hourly profiles;
- Proposed employee shift patterns; and
- Timing of planned network improvements.

4.5.1.5 It is therefore proposed that prior to the commencement of the relevant part of the connection works, the CTMPCo will submit details (to the relevant highway authorities) of the revised forecast traffic flows that will pass through each of the sensitive junctions and the timing of these movements. The relevant highway authorities will then advise if they require further assessment (including, capacity, road safety and air quality and noise).

4.5.1.6 If the relevant highway authorities consider that more detailed assessment is required, the methodology for modelling will first be agreed with the relevant highway authorities. This will include:

- The approach to gathering baseline data (turning counts, queue length surveys, etc.);
- Approach to factoring survey data to a future year, e.g. appropriate TEMPRo (Trip End Model Presentation Program) factors; and
- Modelling software.

4.5.1.7 The CTMPCo will develop measures (such as car-sharing, spreading of arrival/ finish times) to ensure impacts are not significant.

4.6 Road safety

4.6.1.1 Section 7.11 of **Volume A3, Chapter 7: Traffic and Transport** identified potentially significant road safety effects associated with an increase in construction traffic through the junction of the B1248 and Miles Lane and the junction of Coppleflat Lane and Newbald Road.

4.6.1.2 To reduce the impact of HGV movements through these junctions the ES set out the following potential mitigation measures:

- A temporary reduction in the existing speed limit to reduce the speed on all approaches to 30 mph;
- Temporary warning signs to advise of turning HGV traffic; and
- Requiring the Principal Contractor to ensure that existing verges and hedges are well maintained to ensure forward visibility is preserved.

4.6.1.3 Prior to the commencement of the relevant part of the connection works, mitigation measures will be developed by the CTMPCo in liaison with ERYC and outlined within the final CTMP.

4.7 Parking and Loading

4.7.1.1 Appropriate loading/unloading and parking areas for construction vehicles will be designated within the sites to avoid the need for parking or waiting on the highway. The planning of deliveries via the booking system will assist the CTMPCo to allocate sufficient space to accommodate the planned number of deliveries.

4.8 Cumulative Effects

4.8.1.1 The ES outlines the potential for cumulative effects between Hornsea Four construction traffic and two highway improvements schemes, namely:

- A164/ Jocks Lodge highway improvement scheme (being developed by ERYC); and
- A63 Castle Street highway improvement scheme (being developed by Highways England (now National Highways)).

4.8.1.2 Due to uncertainties regarding the timings of the start of construction of these projects, it has been agreed with ERYC (during a meeting on 2 October 2019, (ON-HUM-4.3) and Highways England (during a meeting on 5 September 2019, (ON-HUM-4.2) that the potential for cumulative effects can be managed through measures within the finalised CTMPs for the respective projects. It is anticipated that construction of the two highway improvement schemes is unlikely to overlap significantly with Hornsea Four.

4.8.1.3 It is proposed therefore, that should the finalised construction programmes for the aforementioned projects highlight a potential overlap, the CTMPCo will engage with the highway authorities to agree mitigation measures where appropriate. Mitigation measures could include for example, the respective projects committing to a programme of works that ensure peak traffic movements do not overlap.

5 Monitoring, Enforcement and Action Plan

5.1 Introduction

5.1.1.1 The following section sets out how the targets and measures contained within this oCTMP will be monitored to ensure compliance.

5.2 Monitoring

5.2.1 Community Liaison

5.2.1.1 The CTMPCo will appoint a community liaison officer who will be the first point of contact for all concerns raised. Contact details will be circulated to local communities and stored at community hubs (such as town halls and libraries) for reference.

5.2.1.2 Signs will be erected at all traffic management locations with the relevant contact number clearly displayed for public enquiries.

5.2.1.3 All enquiries would be recorded and responded to within seven working days. The enquirer will receive a written response detailing what action (if necessary) has been taken.

5.2.2 HGV Numbers

5.2.2.1 To ensure compliance with the assessed daily HGV movements (outlined in **Section 2.2** of this document), the CTMPCo will operate a booking system for all deliveries. The booking system will be continuously monitored (by the CTMPCo) to ensure the assessed number of movements are adhered to.

5.2.3 HGV Routing

5.2.3.1 The CTMPCo will implement a system to help the public distinguish HGV construction vehicles associated with Hornsea Four from other traffic on the network. Each vehicle will be required to display a unique identifier within the window of the cab (a recognisable logo) that will allow members of the public to report any concerns such as driver behaviour or the use of unapproved routes via a publicised telephone contact number.

5.2.3.2 CTMPCo will also ensure that weighting is given to the selection of suppliers with GPS tracking. GPS tracking together with delivery records will serve to augment the unique identifier to allow the CTMPCo to respond to any complaints and provide a complete evidence base.

5.2.4 Employee Mode Share

5.2.4.1 The CTMPCo will require all employees and visitors to sign in and out. This process will capture the employee's method of travel.

5.2.5 Road Safety

5.2.5.1 The CTMPCo will operate a 'near miss' reporting system for all highways incidents. The CTMPCo will ensure that all accidents and near misses are recorded within this system and that drivers are reminded to report all issues through inductions. Any accidents or near misses will be recorded, investigated, and reported to the highway authorities by the CTMPCo.

5.2.5.2 The CTMPCo will retain records of all incidents and submit to the highway authorities upon request. If emerging issues are identified, the CTMPCo will initiate discussions with stakeholders to promote a 'Zero Harm Culture'.

5.2.6 Highway Condition Surveys

5.2.6.1 Highway condition surveys will be undertaken by the CTMPCo prior to the commencement of the relevant part of the connection works and after the substantial completion of construction works. The surveys will include all roads within the traffic and transport study area that are not specifically designated for HGV movements (ERYC 2012), i.e. excluding all A roads and the B1248. Any damage to the existing road network as a consequence of Hornsea Four will be repaired by the Principal Contractor or a financial contribution made to the highway authorities to cover the cost of remedial works.

5.2.6.2 The survey will most likely comprise of a Coarse Visual Inspection survey (in accordance with the UK Pavement Management System standard). Prior to the commencement of the relevant part of the connection works the extent and scope of surveys will be agreed between the CTMPCo and the highway authorities and outlined within the final CTMP.

5.2.7 Monitoring Reports

5.2.7.1 Data recorded from the monitoring processes outlined above will be drawn together by the CTMPCo to produce a monthly monitoring report and made available to the highway authorities on request.

5.2.7.2 In compiling the monitoring report, the CTMPCo will be able to identify effective/ineffective measures and the requirement for any remedial action to achieve the agreed targets. A typical structure for the monitoring report would be as follows:

- **Introduction and Background** – this will provide detail with regards to the types of works being undertaken and number of construction workers;
- **Results of Surveys and Monitoring** – the CTMPCo will collate the results of surveys and monitoring that have been undertaken. Where appropriate, the results of the surveys undertaken will be compared to the targets defined in the oCTMP. Data obtained from the surveys will be included as an appendix;
- **Achievements** – this will include the work undertaken over the previous period with evidence and examples;
- **Specific Measures** – this will detail how all measures from the CTMP have been implemented;
- **Summary** – the CTMPCo will detail whether the CTMP is on track to meet its targets and if not, why not; and
- **Future Plan** – this will detail the CTMP for the next period to include any specific outcomes or desired results with any additional measures that are to be included to remediate action.

5.3 Enforcement

5.3.1.1 To ensure that the final CTMP is effectively enforced, it is important to define what will constitute a breach. The following actions will constitute a breach of the CTMP, whereby corrective measures will be required:

- Exceedance of target daily vehicle numbers;
- Construction workers overspill parking on the public highway;
- Construction traffic operating outside of agreed hours;
- Construction traffic being driven in contravention of the level crossing safety instructions;
- Construction HGVs not adhering to the agreed routes/times; or
- Construction traffic being driven inappropriately, i.e. in contravention of the Highway Code.

5.3.1.2 On receipt of a report of a potential breach, the CTMPCo will investigate the circumstances and compile a report for the relevant highway authority as soon as reasonably practicable. The report will outline the outcome of the investigation and what corrective action (as necessary) has been implemented.

5.3.1.3 If the breach is found to be material, the CTMPCo will take appropriate action within the jurisdiction of the contract and report back to the relevant highway authority.

5.3.1.4 Individual employee breaches will be addressed through UK employment law whereby the process outlined above will form the basis for disciplinary proceedings.

5.4 Action Plan

5.4.1.1 The action plan set out in **Table 5** summarises the commitments and measures that will be implemented by the Applicant, Principal Contractor and CTMPCo.

5.4.1.2 **Table 5** also provides an indicative timescale for the implementation of each of the measures. The exact details and associated timescales will be established in consultation with the highway authorities as part of the preparation of the final CTMP.

Table 5: oCTMP Action Plan.

Measure ID	Measure	Responsibility	Indicative Timescale
M001	Nomination of an Environmental Manager.	The Applicant	Prior to the commencement of the relevant part of the construction works
M002	Appointment of a CTMPCo.	PC	Prior to the commencement of the relevant part of the construction works
M003	Obtain technical approval for construction of accesses and crossings.	CTMPCo	Prior to the commencement of the relevant part of the construction works

Measure ID	Measure	Responsibility	Indicative Timescale
M004	Obtain technical approval for construction of road widening.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M005	Implement direction signing.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M006	Evaluate the potential for cumulative effects and where necessary agree mitigation measures.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M007	Provide details of traffic flows through sensitive junctions and where necessary agree mitigation measures.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M008	Agree and implement road safety improvements at the junction of the B1248 and Miles Lane and at the junction of Coppleflat Lane and Newbald Road.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M009	Establish monitoring systems: • Delivery booking system; • Unique vehicle identifier system; and • Telephone reporting system.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M010	Agree scope of and undertake highway pre-work condition surveys.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M011	Agree and implement measures for each access to control the deposition of detritus on the public highway.	CTMPCo	Prior to the commencement of the relevant part of the construction works
M012	Inspect the highway for detritus and request regular cleansing as required.	CTMPCo	Ongoing throughout construction
M013	Monitoring of CTMP measures: • HGV movements; • Accidents and near misses; • Employee mode share; and • Complaints.	CTMPCo	Ongoing throughout construction
M014	Produce monthly monitoring reports.	CTMPCo	Ongoing throughout construction
M015	Updated condition surveys and agree extent of any remedial works.	CTMPCo	Following completion of construction

6 References

East Riding of Yorkshire Council (EYRC) (2012). *HGV Freight Map*. EYRC.

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