



AQUIND Limited

AQUIND INTERCONNECTOR

Environmental Statement Addendum 2

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

Document Ref: 7.8.2

PINS Ref.: EN020022

AQUIND Limited

AQUIND INTERCONNECTOR

Environmental Statement Addendum 2

PINS REF.: EN020022

DOCUMENT REF.: 7.8.2

DATE: 25 JANUARY 2021

WSP

WSP House

70 Chancery Lane

London

WC2A 1AF

+44 20 7314 5000

www.wsp.com

DOCUMENT

Document	7.8.2 Environmental Statement Addendum 2
Revision	001
Document Owner	WSP UK Limited
Prepared By	G. Irvine, S. Lister, R. Hodson
Date	25 January 2021
Approved By	U. Stevenson
Date	25 January 2021

CONTENTS

1.	INTRODUCTION	1-1
<hr/>		
1.1.	PURPOSE OF THE ENVIRONMENTAL STATEMENT ADDENDUM 2	1-1
1.2.	OVERVIEW OF THE PROPOSED DEVELOPMENT	1-1
1.3.	SCOPE OF THE ES ADDENDUM	1-2
1.4.	STRUCTURE OF ES ADDENDUM 2	1-4
2.	DESCRIPTION OF THE PROPOSED DEVELOPMENT	2-2
<hr/>		
2.1.	INTRODUCTION	2-2
2.2.	UPDATED ONSHORE INFORMATION: PROPOSED DEVELOPMENT	2-2
2.3.	UPDATED MARINE INFORMATION: PROPOSED DEVELOPMENT	2-2
3.	PHYSICAL PROCESSES	3-10
<hr/>		
3.1.	INTRODUCTION	3-10
3.2.	IMPACT ASSESSMENT	3-10
3.3.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	3-13
3.4.	PROPOSED MITIGATION	3-14
3.5.	CONCLUSION	3-15
4.	MARINE WATER AND SEDIMENT QUALITY	4-16
<hr/>		
4.1.	INTRODUCTION	4-16
4.2.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	4-17
4.3.	MARINE WATER FRAMEWORK DIRECTIVE ASSESSMENT	4-17
4.4.	CONCLUSION	4-19
5.	INTERTIDAL AND BENTHIC HABITATS	5-20
<hr/>		
5.1.	INTRODUCTION	5-20
5.2.	IMPACT ASSESSMENT	5-20
5.3.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	5-22
<hr/>		

5.4.	PROPOSED MITIGATION	5-23
5.5.	MARINE CONSERVATION ZONE ASSESSMENT	5-23
5.6.	CONCLUSION	5-23
6.	FISH AND SHELLFISH	6-24
<hr/>		
6.1.	INTRODUCTION	6-24
6.2.	IMPACT ASSESSMENT	6-24
6.3.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	6-27
6.4.	PROPOSED MITIGATION	6-29
6.5.	MARINE CONSERVATION ZONE ASSESSMENT	6-29
6.6.	CONCLUSION	6-29
7.	MARINE MAMMALS AND BASKING SHARKS	7-30
<hr/>		
7.1.	INTRODUCTION	7-30
7.2.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	7-31
7.3.	CONCLUSION	7-32
7.4.	SUPPLEMENTARY INFORMATION IN RESPONSE TO EXQ2 – MG2.1.1	7-32
8.	MARINE ORNITHOLOGY	8-36
<hr/>		
8.1.	INTRODUCTION	8-36
8.2.	IMPACT ASSESSMENT	8-36
8.3.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	8-38
8.4.	PROPOSED MITIGATION	8-39
8.5.	CONCLUSION	8-39
9.	COMMERCIAL FISHERIES	9-40
<hr/>		
9.1.	UPDATED INFORMATION – JANUARY 2021	9-40
9.2.	IMPACT ASSESSMENT	9-40
9.3.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	9-43
9.4.	PROPOSED MITIGATION	9-45

9.5.	CONCLUSION	9-45
10.	SHIPPING, NAVIGATION AND OTHER MARINE USERS	10-46
<hr/>		
10.1.	INTRODUCTION	10-46
10.2.	IMPACT ASSESSMENT	10-47
10.3.	NAVIGATION RISK ASSESSMENT	10-50
10.4.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	10-53
10.5.	PROPOSED MITIGATION	10-54
10.6.	CONCLUSION	10-54
11.	MARINE ARCHAEOLOGY	11-55
<hr/>		
11.1.	INTRODUCTION	11-55
11.2.	CUMULATIVE AND TRANSBOUNDARY EFFECTS	11-55
11.3.	OUTLINE MARINE WRITTEN SCHEME OF INVESTIGATION	11-56
11.4.	CONCLUSION	11-56
12.	LANDSCAPE AND VISUAL AMENITY	12-57
<hr/>		
12.1.	INTRODUCTION	12-57
12.2.	IMPLICATIONS OF HDD5 LAUNCH COMPOUND OPTION CONFIRMATION 12-57	
12.3.	IMPLICATIONS OF ASH DIEBACK ON THE LVIA	12-58
12.4.	UPDATED INFORMATION: EXAMINING AUTHORITY FURTHER WRITTEN QUESTION (EXQ2) LV2.9.1	12-70
13.	ONSHORE ECOLOGY	13-75
<hr/>		
13.1.	INTRODUCTION	13-75
13.2.	IMPACT ASSESSMENT	13-75
13.3.	PROPOSED MITIGATION	13-76
13.4.	RESIDUAL EFFECTS	13-77
13.5.	CONCLUSION	13-77

14.	TRAFFIC AND TRANSPORT	14-78
14.1.	INTRODUCTION	14-78
14.2.	IMPACT ASSESSMENT	14-82
14.3.	PROPOSED MITIGATION	14-96
14.4.	RESIDUAL EFFECTS	14-96
14.5.	CONCLUSION	14-100
15.	AIR QUALITY	15-101
15.1.	INTRODUCTION	15-101
15.2.	IMPACT ASSESSMENT	15-101
15.3.	PROPOSED MITIGATION	15-103
15.4.	RESIDUAL EFFECTS	15-103
15.5.	CONCLUSION	15-103
16.	WASTE AND MATERIAL RESOURCES	16-104
16.1.	INTRODUCTION	16-104
16.2.	SUPPLEMENTARY INFORMATION	16-104
16.3.	UPDATED INFORMATION: MATERIAL QUANTITIES DURING CONSTRUCTION STAGE: MARINE CABLE CORRIDOR	16-105
16.4.	CONCLUSION	16-107
17.	CARBON AND CLIMATE CHANGE	17-109
17.1.	INTRODUCTION	17-109
17.2.	UPDATED INFORMATION	17-109
18.	SUMMARY	18-112
18.1.	INTRODUCTION	18-112
	REFERENCES	18-118

TABLES

Plate 2.1 - Location of where CCF cable and the UK Marine Cable Corridor cross mid-Channel near the EEZ boundary line.....	2-3
Plate 2.2 - Location of the CCF Cable Crossing between Kilometre Point ('KP') 97 and 98 of the Marine Cable Corridor.....	2-4
Table 2.1 - Update to Table 3.2 - Anticipated TDL after bed form clearance KP 1-109.2-6	6
Table 2.2 - Update to Table 3.4 - Indicative number of vessels and trips required	2-6
Table 2.3 - Update to Table 3 - Non-Burial Protection Measures along the Marine Cable Corridor Worst-Case Design Parameters for Two Bundled Cable Pairs	2-7
Table 2.4 - Update to Table 2 - Summary of the seabed preparation areas along the UK Marine Cable Corridor	2-8
Table 2.5 - Implications of the amendments to include CCF Crossing on the Marine and Onshore EIA	2-9
Table 3.1 - Update to Table 6.15 – Worst Case Design Parameters	3-11
Table 5.1 - Update to Table 8.6 – Worst Case Design Parameters	5-21
Table 6.1 - Update to Table 9.9 – Worst Case Design Parameters	6-25
Table 7.1 - Estimated ranges of the zones of potential impact (cumulative PTS isopleths) for each marine mammal hearing group. The grey shading indicates the scenarios considered to represent the most likely (ML) and worst case (WC) scenarios	7-34
Table 7.2 - Estimated number of individuals which have the potential to be affected.	7-35
Table 8.1 - Update to Table 11.10 – Worst Case Design Parameters	8-37
Table 9.1 - Update to Table 12.7 - Worst Case Scenarios	9-41
Table 12.1 - Recreational receptors users of the Monarch's Way– changes to the 2019 ES LVIA	12-63
Table 12.2 - Recreational receptors to the south - DC19 / HC28 – changes to the 2019 ES LVIA	12-65
Table 16.1 – Revised Rock Material Quantities	16-104

Table 16.2 - Materials imported to site during the Construction Stage: Marine Cable Corridor	16-105
Table 16.3 - Potential impacts of consuming material resources and disposing of waste during construction of the Proposed Development.....	16-106
Table 17.1 – Total Construction Emissions	17-110
Table 17.2 - Marine Cable Corridor Construction Emissions	17-110
Table 18.1 - Summary of changes to the 2019 ES	18-113

PLATES

Plate 2.1 - Location of where CCF cable and the UK Marine Cable Corridor cross mid-Channel near the EEZ boundary line	2-3
Plate 2.2 - Location of the CCF Cable Crossing between Kilometre Point ('KP') 97 and 98 of the Marine Cable Corridor.	2-4

APPENDICES

Appendix 1 Environmental Statement Errata Sheet 2	
Appendix 2 – NOAA Tool Input and Spreadsheets	
Appendix 3 – Ash Dieback Survey Results	
Appendix 4 – Figure 1 – Denmead Meadows: SINC, NVC Survey Results and Compounds	
Appendix 5 – Clean Air Zone Sensitivity Testing	

1. INTRODUCTION

1.1. PURPOSE OF THE ENVIRONMENTAL STATEMENT ADDENDUM 2

1.1.1.1. An Environmental Statement ('ES') (APP-116 – APP-487) was submitted to the Planning Inspectorate ('PINS') on 14 November 2019 as part of the application for Development Consent Order ('DCO') for the UK Onshore and Marine Components of AQUIND Interconnector ('the Proposed Development') (the 'Application'). The 2019 ES sets out the findings of the Environmental Impact Assessment ('EIA') undertaken for the Proposed Development. The submitted ES is hereafter referred to as the '2019 ES'.

1.1.1.2. An ES Addendum was also submitted into Examination at Deadline 1 (REP1-139) to update the 2019 ES in response to Relevant Representations, updates where further information or data has been made available since submission of the 'Application', in light of further assessment carried out, in or as a result of ongoing consultation ('ES Addendum 1').

1.1.1.3. This addendum, hereafter referred to as the 'ES Addendum 2', provides further information and should be read in conjunction with the 2019 ES and the ES Addendum 1. As with ES Addendum 1, ES Addendum 2 provides updates where further information or data has been made available since submission of the Application, and/or in light of further assessment carried out in, or as a result of ongoing consultation. Together, the 2019 ES, the ES Addendum 1 and this ES Addendum 2 comprise the Environmental Statement for the Application.

1.2. OVERVIEW OF THE PROPOSED DEVELOPMENT

1.2.1.1. The UK components of the Project, known as the Proposed Development, consist of Onshore and Marine Components. The Proposed Development comprises the following:

- Works at the existing Lovedean Substation in Hampshire to facilitate the connection of the Proposed Development to the National Electricity Transmission System ('NETS');
- Underground high voltage alternating current ('HVAC') Cables accompanied by a smaller diameter FOC, connecting Lovedean Substation to the proposed Converter Station;
- A newly constructed Converter Station Area comprising:
 - the Converter Station and associated equipment;
 - a Works Compound and Laydown Area;

- an Access Road and associated haul roads;
- surface water drainage and associated attenuation ponds;
- landscape and ecology measures;
- utilities such as potable water, electricity and telecoms; and
- the compound comprising the Telecommunications Building(s) and associated equipment;
- Two pairs of underground Onshore HVDC Cables, each pair accompanied by a smaller diameter Fibre-Optic Cable ('FOC'), to run from the Converter Station to the Landfall site in Eastney (near Portsmouth), approximately 20 km in length;
- Infrastructure to join the Onshore and Marine HVDC Cables together at the Landfall, and two Optical Regeneration Stations ('ORS') (one for each circuit) housed in separate buildings; and
- Two pairs of Marine HVDC Cables, each pair accompanied by a smaller diameter FOC, to run from the Landfall site in Eastney to the boundary of the UK Exclusive Economic Zone ('EEZ').

1.2.1.2. Sections 3.5 – 3.6 of Chapter 3 (Description of the Proposed Development) of the 2019 ES (APP-118) describe the Proposed Development in further detail.

1.3. SCOPE OF THE ES ADDENDUM

1.3.1.1. This ES Addendum 2 has been submitted at Deadline 7 in order to provide further information as follows:

- Further assessment for marine and relevant onshore topics as a result of a minor amendment to the design of the marine aspects of the Proposed Development in order to accommodate an additional cable crossing where it has become known a new cable crossing is proposed within the UK Marine Cable Corridor (described at paragraph 1.3.2 below);
- Addressing matters raised by the Examining Authority in their Further Written Questions (ExQ2) including additional information in relation to the landscape and visual assessment in relation to: LV 2.9.1 (assessment of new viewpoints) and Ex A 2.6.6 (implications of Ash dieback);
- The results of additional air quality sensitivity testing, in order to address the impact of traffic re-distribution resulting from the introduction of a charging Clean Air Zone in Portsmouth following the publication of new monitoring data in the 2020 Air Quality Annual Status Report update to Defra (Portsmouth City Council (2020)).

- The traffic and transport effects of minor updates to the framework construction traffic management plan and framework traffic management strategy and minor alterations to indicative joint bay numbering / locations to align with the Joint Bay Feasibility Report; and
- An ES Errata Sheet is included (Appendix 1, document reference 7.8.2.1) to address errors within the 2019 ES.

1.3.1.2. An updated Non-Technical Summary ('NTS') is also provided. Where no changes have been made to chapters of the 2019 ES, the original conclusions remain valid. Where changes to the chapters of the 2019 ES have been required, any alterations to the original conclusions that may result are described.

1.3.2. **CROSSCHANNEL FIBRE DEVELOPMENT**

1.3.2.1. The ES is updated as a result of information coming to light that a marine telecom cable (CrossChannel Fibre, 'CCF') is proposed to be installed by Crosslake Fibre UK Ltd. which will likely be consented and built prior to the Proposed Development. As the CCF project crosses the Marine Cable Corridor, this has resulted in a requirement to include another marine cable crossing within the design parameters of the marine aspects of the Proposed Development in order to facilitate the successful construction of the Proposed Development. Although the Applicant was aware of the proposed CCF development, the need for a cable crossing was not known at the time of submission of the 2019 ES, as the CCF application timescales and final development route were not known until late 2020.

1.3.2.2. Crosslake Fibre UK Ltd. is proposing to install and operate a submarine fibre optic cable between the UK and France (i.e. CCF) and the marine licence application will be determined under the Marine and Coastal Access Act (MCAA) 2009. CCF received pre-application advice on their proposed development from the Marine Management Organisation ('MMO') in late July 2020 although this is not currently in the public domain and information provided within this document describing the CCF development has been produced following discussion and agreement with the CCF project team.

1.3.2.3. CCF is proposing an indicative 24-day construction period for the whole installation (beach manhole to beach manhole) of the cable from UK to France, i.e. only 12 days in the UK Marine Area. CCF propose to bury the cable to a target depth of 1.5 m using a plough and jetting with remotely operated vehicle ('ROV'). Once operational, maintenance of the cables is considered to be minimal and any faults would require investigation and emergency repair. As with the Proposed Development, any repair works would be similar in scale (or less than) the installation of the cable i.e. of very short duration and limited spatial extent.

1.3.2.4. The Applicant has been engaging with the CCF team in regard to the interactions of the two developments. The CCF proposed crossing design ensures that it can be incorporated into the Proposed Development without any changes to the spatial extents of the UK Marine Cable Corridor. CCF has confirmed that they have finalised their route selection and expect to submit a marine licence application to the MMO in January 2021 with a view to commence construction in September 2021.

1.3.2.5. As such, the Applicant is required to take a precautionary approach to this potential interaction with the CCF development and accommodate another cable crossing within the design of the Proposed Development in case CCF receives a marine licence and builds out prior to the Proposed Development.

1.4. STRUCTURE OF ES ADDENDUM 2

1.4.1.1. This ES Addendum 2 is arranged by topic in the same order as presented within the 2019 ES.

1.4.1.2. Where no change to the technical chapter and associated figures and appendices presented within the 2019 ES is necessary, no additional text regarding that topic has been included within this ES Addendum 2. Updates to figures and appendices as discussed in this ES Addendum 2 are appended to this ES Addendum 2.

1.4.1.3. Changes to the 2019 ES (as updated by ES Addendum 1) are presented as either supplementary information where information is being added into the chapter, or superseding information where information is being replaced and updated.

1.4.1.4. Section 2 of this ES Addendum 2 provides the updates to Chapter 3 Description of the Proposed Development (APP-118) and relevant appendices within the ES.

1.4.1.5. Sections 3-11 of this ES Addendum 2 provides additional assessments of the inclusion of the CCF Crossing in the Proposed Development. In reviewing each marine chapter, updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development. For impacts where the worst case scenarios and maximum parameters are unchanged by the construction of the CCF Crossing, the assessments are unchanged and remain valid. Where impacts have been re-assessed, the additional activity and infrastructure resulting from the CCF Crossing has been assessed as a part of the whole Proposed Development alone.

- 1.4.1.6. In terms of cumulative assessment, cumulative effects have been reconsidered for those impacts that may contribute to significant cumulative effects resulting from activities relating to the preparation, construction (and decommissioning) and operation (including repair and maintenance) of the whole of the CCF development within the UK Marine Area, along with those activities of the Proposed Development and the other relevant projects and plans considered in each chapter.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1. INTRODUCTION

2.1.1.1. The Description of the Proposed Development is contained within Chapter 3 of the 2019 ES (APP-118). This contains information regarding the construction, operation and decommissioning stages of the Proposed Development. In addition, further detail, particularly with regards to design, is contained within the DAS (REP6-025). The DAS also outlines the Design Principles for the Converter Station, the Telecommunication buildings and the ORS.

2.2. UPDATED ONSHORE INFORMATION: PROPOSED DEVELOPMENT

2.2.1.1. Within both the 2019 ES (APP-118) and the ES Addendum (REP1-139), two options for the location of the launch compound for Horizontal Directional Drill (HDD) 5 have been identified, to the north of Hambledon Road within Denmead Meadows and one in the field the south of Hambledon Road. The former, being located within an area of lowland meadow habitat of ecological importance, was assumed to be the worst-case option in terms of likely environmental effects, and therefore this option was used in the ES and its Addendum as the basis of the assessment of impacts.

2.2.1.2. The Applicant can now confirm that the launch compound option to the south of Hambledon Road is to be taken forward, with no significant engineering constraints that would require the use of the compound option to the north of Hambledon Road. The southern compound option is therefore confirmed, forming part of the Proposed Development, and the launch compound option to the immediate north of Hambledon Road no longer required as an option is removed.

2.2.1.3. Given that the assessments contained in the ES assessed a worst-case scenario of the launch compound being located in the field to the north of Hambledon Road, it is confirmed that there are no additional effects to report in this ES Addendum 2 as a result of this confirmation. The impact assessment and proposed mitigation contained within ES Chapter 16 Onshore Ecology (APP-131) has, however, been updated to reflect this position.

2.3. UPDATED MARINE INFORMATION: PROPOSED DEVELOPMENT

2.3.1.1. The existing design presented within Chapter 3 Description of the Proposed Development (APP-118) of the 2019 ES remains valid and the requirement for the Atlantic Cable Crossing still remains as shown in Figures 3.7 and 3.8 of the 2019 ES

(APP-151 and 152). This section provides further information in relation to the cable crossing required for the CCF development within the Order limits within the UK Marine Area (i.e. the UK Marine Cable Corridor). This additional cable crossing will not result in a change to the Order limits as the angle at the point where the two cables will cross will allow the cable crossing infrastructure to fit within the Order limits (APP-146) and Works Plans (REP6-009) already defined and submitted.

2.3.1.2.

Initial engagement with CCF resulted in small changes to their final route in order to accommodate a cable crossing within the Proposed Development. In addition, CCF has provided a shapefile of the final CCF route to the Applicant and Plate 2.1 illustrates the location of the additional CCF Cable Crossing along the UK Marine Cable Corridor mid-Channel close to the European Economic Zone ('EEZ') boundary

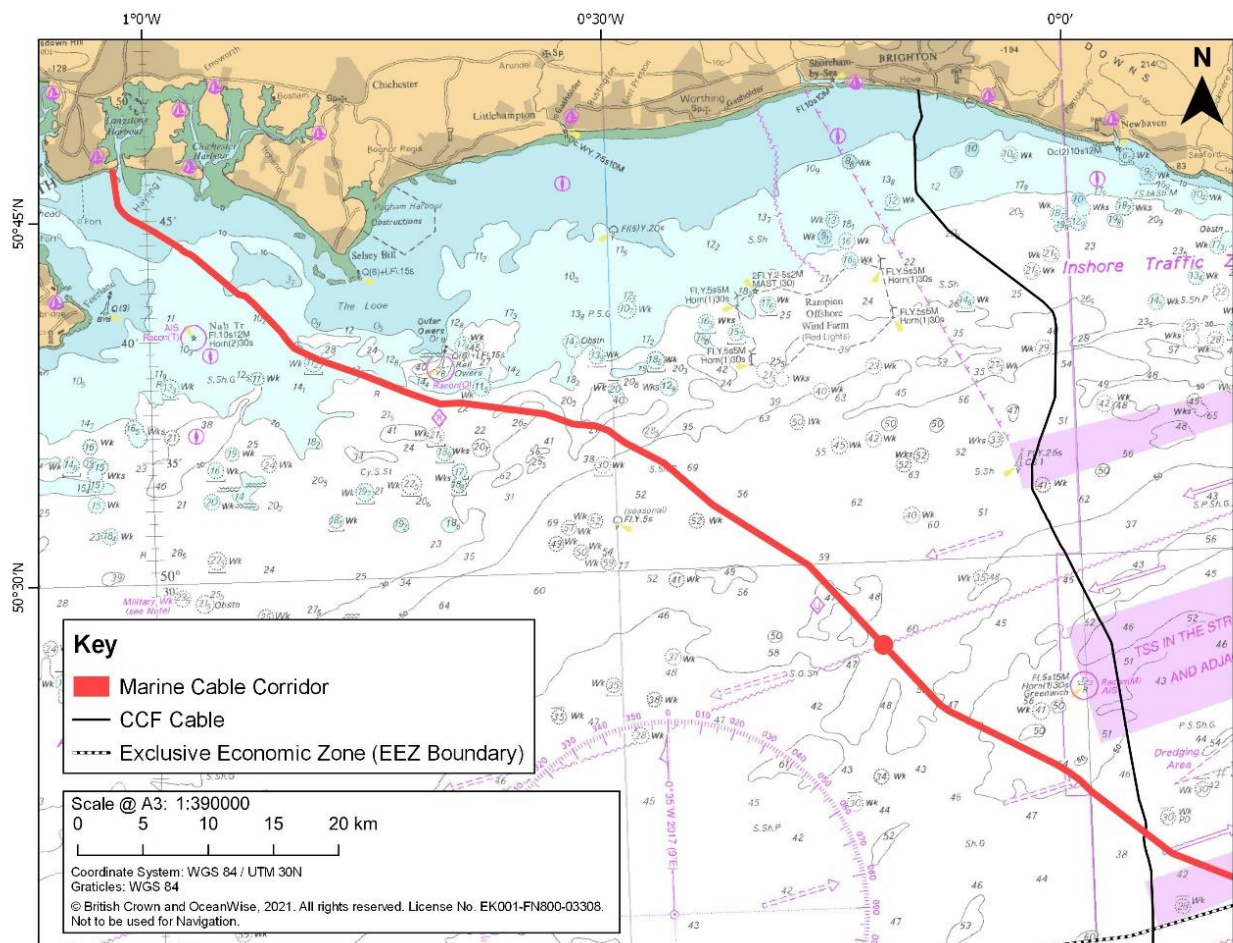


Plate 2.1 - Location of where CCF cable and the UK Marine Cable Corridor cross mid-Channel near the EEZ boundary line.

2.3.1.3.

Plate 2.2 illustrates the location of the CCF Cable Crossing at approximately Kilometre Point ('KP') 97.5, however, the crossing may be between KP 96.5 and KP 98 of the UK Marine Cable Corridor. The final location of the crossing within this KP

range will be known when the final UK Marine Cable Route for the Proposed Development is confirmed and the CCF route is consented.

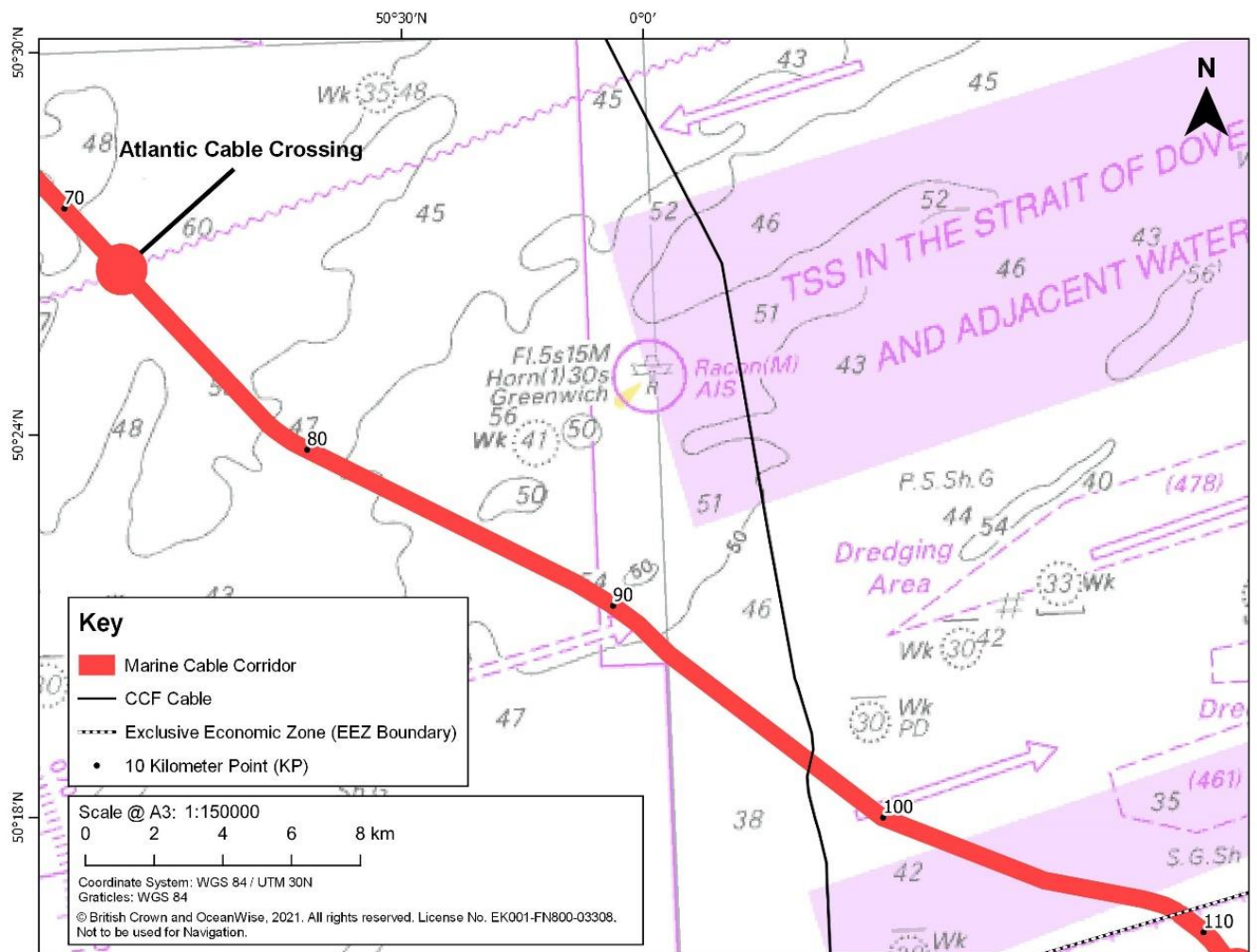


Plate 2.2 - Location of the CCF Cable Crossing between Kilometre Point (‘KP’) 97 and 98 of the Marine Cable Corridor.

- 2.3.1.4. As previously mentioned, as the CCF cable crosses the Proposed Development closer to a 90 degree angle, an additional proposed 600 m cable crossing will fit within the UK Marine Cable Corridor.
- 2.3.1.5. Figure 3.8 of the 2019 ES (APP-153) illustrates two typical cable crossing geometries that are relevant for the Atlantic Crossing but also the CCF Crossing. As was assessed in the 2019 ES for the Atlantic Cable Crossing, the worst case for the CCF crossing is Option 1 (shown in Figure 3.8), which proposes a footprint of rock protection berms of up to 37,800 m², with a pre-lay berm, typically 30 m x 100 m (a single berm that covers the buried in-service cable and provides separation / protection between it and the Marine HVDC Cables) and two post-lay berms 30 m x 600 m which will protect both Marine HVDC Cable pairs.

- 2.3.1.6. As described in Paragraph 3.5.4.4 of Chapter 3, Description of the Proposed Development in the 2019 ES (APP-118), prior to the installation of the Marine Cables, ground condition surveys will identify the pre-construction condition of ground at the crossing locations. In addition, Appendix 3.4 Additional Supporting Information for Marine Works (APP-358), describes that post installation surveys will also be undertaken along the UK Marine Cable Route to ensure the Marine Cables are adequately buried, that any potential risk to navigation is reduced to as low as reasonably practical and that the crossings have been constructed as designed. The inclusion of the additional CCF Crossing will not increase the number of vessels required for construction works and, although there will be a greater requirement for rock, this will not significantly increase the number of return trips of vessels.
- 2.3.1.7. In the 2019 ES marine topic chapters and, as itemised within Table 3 of Appendix 3.2 Marine Worst Case Design Parameters (APP-356), the worst case total maximum footprint of cable protection is 0.7 km² (i.e. 700,000 m²) for construction works as well as for a contingency amount of cable protection to be deployed during the first 15 years of the Operational Stage of the Proposed Development. The amount of cable protection is to be secured within Schedule 15, Part 2, Condition 1 of the Deemed Marine Licence ('DML') within the DCO (REP6-015) such that it cannot be exceeded without approval.
- 2.3.1.8. The requirement for another 37,800 m² of cable protection for the CCF Crossing has been added to that maximum footprint to produce a new worst case maximum footprint of 0.74 km² when rounding up. The update to assessments presented in this ES Addendum 2 revisit the relevant marine (Sections 3-11) and onshore (Sections 16 and 17) topic assessments to re-evaluate the potential effects of the proposed additional cable crossing and the laying of rock protection on relevant receptors. The dDCO (REP6-015) has also been updated such that the maximum cable protection parameter presented in Part, Condition 1 of the DML now accommodates the CCF Crossing.
- 2.3.1.9. As a result of this additional cable crossing there are minor corrections in relation to the Chapter 3, Description of the Proposed Development in the 2019 ES (APP-118), outlined below.

2.3.2. MINOR AMENDMENTS TO THE DESCRIPTION OF THE PROPOSED DEVELOPMENT

- 2.3.2.1. An amendment is made to Table 3.2 (Anticipated TDL after bed form clearance KP 1-109) of Chapter 3 (Description of the Proposed Development) in the 2019 ES (APP-118) to provide updated lengths and proportions of UK Marine Cable Route where target depth of lowering ('TDL') will be achieved. Parameters shown in **bold** for TDL 1.0 m and TDL 2.5 m are the only parameters that have changed.

Table 2.1 - Update to Table 3.2 - Anticipated TDL after bed form clearance KP 1-109

TDL (m)	Length of Marine Cable Route	Proportion of Marine Cable Route	Anticipated length of Marine Cable Route at TDL where remedial non-burial protection may be required	Anticipated proportion of Marine Cable Route at TDL where remedial non-burial protection may be required
1.0	57.3 km	54%	1,200 m	2%
1.4	3.5 km	3%	100 m	2%
1.7	28.8 km	27%	2,900 m	10%
1.9	0.3 km	0.3%	100 m	10%
2.0	6.0 km	6%	600 m	10%
2.5	9.6 km	9%	4,100 m	40%
3.0	1.5 km	1%	1,500 m	100%

2.3.2.2. The changes compared to the 2019 ES (APP-118) are:

- The TDL at 1.0 m has increased from 53% to 54%; and
- The TDL at 2.5 m has decreased by 600 m from 10.2 km to 9.6 km.

2.3.2.3. An amendment is made to Table 3.4 (Indicative number of vessels and trips required) of Chapter 3 (Description of the Proposed Development) in the 2019 ES (APP-118) to provide an updated indicative number of return trips as a result of the additional cable crossing. The only amendment is an increase for the cable crossing activity by 2 more return trips as shown in **bold** below.

Table 2.2 - Update to Table 3.4 - Indicative number of vessels and trips required

Activity	Indicative no. of vessels	Indicative no. of return trips
Seabed Preparation		
PLGR, boulder removal, uneven seabed and cable crossings	10	56
Dredging / MFE/ Disposal	1	9

2.3.2.4. The change compared to the 2019 ES (APP-118) is:

- The indicative number of return trips for PLGR, boulder removal, uneven seabed and cable crossings has increased from 54 to 56.

2.3.2.5. An amendment is made to paragraph 3.5.6.26 of Chapter 3 (Description of the Proposed Development) in the 2019 ES (APP-118). Paragraph 3.5.6.26 stated the following:

“The Marine Cable Corridor crosses one in-service cable; the Atlantic Crossing 1 at KP 72.5 (Figures 3.7 and 3.8) a subsea telecommunications cable which links the USA with three European countries. A cable crossing agreement will be put in place with the cable owners, in line with the relevant guidance. This agreement will detail the design and methodology for the cable crossing. It is anticipated that non-burial protection methods will be employed at the cable crossing.”

2.3.2.6. It should now be read as follows:

“The UK Marine Cable Corridor crosses one in-service cable; the Atlantic Crossing 1 at approximately KP 72.5, a subsea telecommunications cable which links the USA with three European countries (Figures 3.7 and 3.8), and it is also anticipated will cross the proposed CCF Crossing at approximately KP 97.5. a soon-to-be-installed submarine fibre optic cable between France and the UK (Figure 3.8). Final crossing locations will be known when the final Marine Cable Route is confirmed. Cable crossing agreements will be put in place with the cable owners, in line with the relevant guidance. These agreements will detail the design and methodology for the cable crossings. It is anticipated that non-burial protection methods will be employed at the cable crossings.”

2.3.2.7. An amendment is made to Table 3 (Non-Burial Protection Measures along the Marine Cable Corridor Worst-Case Design Parameters for Two Bundled Cable Pairs) of Appendix 3.2 Marine Worst Case Design Parameters (APP-356) which should now state the following:

Table 2.3 - Update to Table 3 - Non-Burial Protection Measures along the Marine Cable Corridor Worst-Case Design Parameters for Two Bundled Cable Pairs

Activity	Duration / Timing	Disturbance / Footprint
Cable Crossings Protection (i.e. Atlantic and CCF Crossings)	Within 2 – 12 months of cable installation, with crossing construction undertaken before and	Requirements for EACH of two in-service cable crossings: One pre-lay rock berm, which will be covered by the post lay berm eventually, approximately 100 m long and 30 m wide. Total footprint (total for two cable pairs) = 3000 m ² Height of pre-lay rock berm = 1.5 m. Installation of two post-lay rock berms. Each berm up to approximately 30 m wide and 600 m long.

Activity	Duration / Timing	Disturbance / Footprint
	after cable installation	<p>Height of post-lay berm above seabed (or pre-lay berm) up to 1.5 m.</p> <p>Total maximum footprint for each cable crossing (pre-lay and post-lay berm) = Approx. 37,800 m²</p> <p>Total maximum footprint for both cable crossings = Approx. 75,600 m²</p>

- 2.3.2.8. The change compared to the 2019 ES (APP-356) is:
- The inclusion of referring to the CCF Crossing and identifying the increased maximum footprint of **both** cable crossings to 75,600 m².
- 2.3.2.9. An addition is made to Table 2 (Summary of the seabed preparation areas along the UK Marine Cable Corridor) of Appendix 3.3 Qualitative Description of the Marine Cable Corridor (APP-357) which will now include:

Table 2.4 - Update to Table 2 - Summary of the seabed preparation areas along the UK Marine Cable Corridor

Start KP	End KP	Reason for Seabed Preparation
97.5	97.5	CCF Crossing – Cable Crossing (details will depend on final Cable Crossing Agreement)

- 2.3.2.10. Amendments are to be made to Table 1 (Indicative worst-case programme) of Appendix 3.8 Onshore and Marine Programme (APP-362). Where ‘*Cable Crossing Preparation*’ is identified as an activity under the Key Task of ‘*Seabed Clearance/Preparation*’, the indicative duration of this activity will change from ‘*1 week (jointly)*’ to ‘*2 weeks (jointly)*’ within the same Q3 period and this has been rounded up from 8 days as worst case.
- 2.3.2.11. Where ‘*Construction of crossing*’ is identified as an activity of ‘*Cable Crossing*’, the indicative duration of this activity will change from ‘*2 weeks (jointly)*’ to ‘*3 weeks (jointly)*’ within the same Q2/Q3 period and this has been rounded up from 16 days as worst case.
- 2.3.2.12. The changes compared to the 2019 ES (APP-362) are:
- Indicative programme for cable crossing preparation activities will increase by 1 week.

- Indicative programme for cable crossing construction activities will increase by 1 week.

2.3.2.13. For the avoidance of doubt, to reflect the inclusion of another marine cable crossing, the following topics shown in Table 2.5 have been revisited and where necessary, further assessment undertaken.

Table 2.5 - Implications of the amendments to include CCF Crossing on the Marine and Onshore EIA

Discipline	2019 ES conclusions changed by amendments? Yes/No
Chapter 6: Physical Process	No
Chapter 7: Marine Water and Sediment Quality	No
Chapter 8: Intertidal and Benthic Habitats	No
Chapter 9: Fish and Shellfish	No
Chapter 10: Marine Mammals and Basking Sharks	No
Chapter 11: Marine Ornithology	No
Chapter 12: Commercial Fisheries	No
Chapter 13: Shipping, Navigation and Other Marine Users	No
Chapter 14: Marine Archaeology	No
Chapter 27: Waste and Material Resources	No
Chapter 28: Carbon and Climate Change	No
Chapter 29: Cumulative Effects	No

3. PHYSICAL PROCESSES

3.1. INTRODUCTION

3.1.1.1. Chapter 6 (Physical Processes) of the 2019 ES (APP-121) reports the assessment and likely significant effects arising from the Proposed Development on physical processes.

3.1.1.2. A full review of Chapter 6 (Physical Processes) of the 2019 ES (APP-121) has been completed and updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development.

3.1.1.3. The following sections of Chapter 6 to the 2019 ES remain unchanged and remain valid:

- study area;
- legislation, policy and guidance;
- scoping opinion and consultation;
- assessment methodology;
- baseline environment;
- proposed mitigation; and
- residual effects.

3.1.1.4. The impacts considered to be relevant for re-assessment are:

- Construction (and Decommissioning):
 - Obstruction to Flow, Scour Around Structures, Impact on Near Field Flow;
- Operation (incl. repair and maintenance):
 - Obstruction to Flow, Scour Around Structures, Impact on Near Field Flow.

3.1.1.5. The following paragraphs describe the changes and updates to corresponding sections of Chapter 6 of the 2019 ES, as a result of the updates to the Proposed Development described in Section 2.3 of this document.

3.2. IMPACT ASSESSMENT

3.2.1.1. The worst case scenario/s for the impacts requiring re-assessment have been superseded as a result of the revised maximum parameters to accommodate the

inclusion of the CCF Crossing within the marine design of the Proposed Development.

3.2.1.2. Superseding 2019 ES, Chapter 6, Table 6.15: Worst Case Design Parameters:

Table 3.1 - Update to Table 6.15 – Worst Case Design Parameters

Potential Impact	Activities	Worst case parameters used in this assessment
Construction (& Decommissioning) Stage		
<p>Obstruction to Flow, Scour Around Structures, Impact on Near Field Flow (Installation of non – burial cable protection is assessed as the worst case, see paragraph 6.6.4.35 to 6.6.4.38)</p>	<p>Installation of non-burial cable protection</p>	<p>Non-burial protection for construction along c. 11 km (10%) of the Marine Cable Route using rock placement:</p> <p>Rock Placement</p> <p>Width of protection = 15 m non-burial protection (and up to 30 m for rock protection for Atlantic Crossing 1 and CCF cable crossings)</p> <p>Height of protection = generally 1.5 m above the seabed for non-burial protection (and up to 3 m where rock berms at cable crossings overlap for short lengths (~30 m))</p> <p>Footprint = 330,000 m² (0.33 km²)</p> <p>An allowance has also been added to include an additional 10% (11 km or 0.33 km²) non-burial contingency, if further non-burial protection is required during maintenance and repair activities during the first 15 years of operation. Both the remedial non-burial protection and contingency have been considered as part of the worst case.</p> <p>Maximum footprint non-burial protection and contingency = c.0.74 km²</p> <p>This maximum footprint of 0.74 km² also includes protection used at HDD exit pits (900 m²) and for the Atlantic and CCF cable crossing designs (75,600 m²).</p>
Operational Stage (including repair and maintenance)		
<p>Obstruction to flow, scour around structures and impact</p>	<p>Installation of non-burial cable protection</p>	<p>Non-burial protection and infrastructure installed on the seabed. The specific details of each element are provided in the construction section of this table.</p> <p>Infrastructure includes:</p> <ul style="list-style-type: none"> • Rock/mattressing; and

Potential Impact	Activities	Worst case parameters used in this assessment
on near field flow (Installation of non-burial protection on the seabed is assessed as the worst case, see paragraph 6.6.5.1)		<ul style="list-style-type: none"> • Rock berms. Note as mentioned previously; allowance has also been added to include an additional 10% (11 km) non-burial contingency, to cover where burial depths are not met during construction and/or if further non-burial protection is required during repair activities during operation. Indicative maximum footprint is c.0.74 km².

3.2.1.3. The changes compared to the 2019 ES (APP-121) are:

- To accommodate the additional cable crossing, the indicative maximum footprint of cable protection for cable crossings only has increased from 37,800 m² for the Atlantic Crossing alone to 75,600 m² for both the Atlantic and CCF crossings (37,800 x 2 = 75, 600).
- Accordingly, to accommodate both cable crossing designs into the Proposed Development, the indicative maximum footprint of cable protection for all non-burial protection activities during construction and operation has increased from c.0.7 km² to 0.74 km² (i.e. the additional 37,800 m² (0.0378 km²) required for the CCF Crossing has been rounded up to 0.04 km² and added to the maximum footprint of 0.7 km²).

3.2.2. OBSTRUCTION TO FLOW, SCOUR AROUND STRUCTURES, IMPACT ON NEAR FIELD FLOW

3.2.2.1. **Assessment of impact during construction (and decommissioning) stage. Superseding to 2019 ES, paragraph 6.6.4.35:**

The potential exists for effects upon the seabed and sediment transport regime, including scouring of the seabed and tidal flows due to activities which may occur during the Construction Stage, these include:

- *Installation of pre-lay rock berms and installation of post lay rock berms (for Atlantic and CCF cable crossings);*

3.2.2.2. The changes compared to the 2019 ES (APP-121) are:

- Inclusion of the CCF Crossing and associated installation of cable protection in the form of additional rock berm placement.

- 3.2.2.3. Site water depth, seabed sediment and hydrodynamic/metocean baseline conditions at the CCF crossing are not materially different to those assessed in Chapter 6 of the 2019 ES for the Atlantic Cable Crossing. Therefore, it is considered that the magnitude of impacts at the CCF crossing would be highly similar.
- 3.2.2.4. The ‘worst case scenarios’ in relation to the “obstruction to flow, scour around structures, impact on near field flow” for the additional CCF cable crossing are also not materially different to those described in Chapter 6 (Paragraphs 6.6.4.37, 6.6.4.40, 6.6.4.41 and 6.6.5.1) of the 2019 ES for the Atlantic Cable Crossing. It is anticipated that the presence of the installed cable crossing protection (i.e. the low profile rock berms) proposed for the CCF crossing will interrupt seabed processes on only a very localised scale.
- 3.2.2.5. No changes are identified to the conclusions of the assessments (which were considered **not significant** for the impacts assessed) presented in the 2019 ES (APP-121) from the addition of another cable crossing given the anticipated small scale (spatially and geometrically) of the cable crossing structures and the highly localised near-field impacts on hydrodynamics (and any associated impacts on resuspension of adjacent sediments due to the presence of eddies and turbulence in the local flow field).
- 3.2.2.6. Accordingly, the conclusions made in paragraphs 6.6.4.41 and 6.6.5.1 of the 2019 ES are unchanged and remain valid.

3.3. CUMULATIVE AND TRANSBOUNDARY EFFECTS

- 3.3.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.
- 3.3.1.2. The cumulative assessment presented in Section 6.7 of Chapter 6 of the 2019 ES considered the following impacts during all stages of development:
- Increase in Suspended Sediment Concentrations (‘SSC’);
 - Morphological change and alteration of bedforms; and
 - Obstruction to flow, scour around structures, impact on nearfield flow.
- 3.3.1.3. It is not expected there will be any temporal overlap between the installation of the CCF development and the Proposed Development. However, in the absence of a submitted marine licence application for the CCF development, a precautionary approach is being undertaken, and assessment of a potential temporal overlap between CCF and the Proposed Development has been undertaken as construction works for the CCF development could still occur at the same time as the construction works of the Proposed Development and the other relevant projects and plans

considered within Section 6.7 of Chapter 6 (and Appendix 6.4, APP-370) of the 2019 ES.

- 3.3.1.4. Cumulative effects that were of principal concern were those resulting from construction activities that contributed to a predicted greater magnitude, duration and extent of impacts, and effects during operation or decommissioning were considered to be the same, or less.
- 3.3.1.5. However, the CCF construction period offshore will only require a total of 12 days and given the small size of the optic fibre cable (only 40 mm in diameter) to be buried, the construction works would be small in scale with most impacts being localised, temporary and very short in duration. In addition, the spatial overlap of these two developments is limited to the maximum footprint of the cable crossing. Therefore, it is concluded that the magnitude of any potential cumulative impacts during construction (and decommissioning) would be negligible and any effects would not be significant such that the conclusions presented in Section 6.7 of Chapter 6 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.
- 3.3.1.6. Potential CCF cable repair and maintenance works may also coincide with those of the Proposed Development and the other projects and plans considered.
- 3.3.1.7. During operation, subsequent maintenance or repair activities to the CCF cable would be similar or smaller in scale than the installation activities. It is concluded that the magnitude of any potential cumulative impacts during operation (including maintenance and repair) would be very low due to the small spatial extent and very short duration (days) and any effects would not be significant such that the information and conclusions presented in Section 6.7 of Chapter 16 and Chapter 29 of the 2019 ES in regard to inter-project effects are unchanged and remain valid.
- 3.3.1.8. The conclusions stated in Chapter 6 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.
- 3.3.1.9. The conclusions stated in Section 6.7.3 of Chapter 6 and Sections 29.7 and 29.10 of Chapter 29 of the 2019 ES in relation to transboundary effects are unchanged and remain valid.

3.4. PROPOSED MITIGATION

- 3.4.1.1. No potentially significant effects are predicted to result from the CCF development and additional cable crossing and therefore, no additional mitigation is proposed.

3.5. CONCLUSION

- 3.5.1.1. Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, there would be no change in any residual effects to physical processes resulting from the Proposed Development and therefore the conclusions of Chapter 6 in the 2019 ES remain unchanged.

4. MARINE WATER AND SEDIMENT QUALITY

4.1. INTRODUCTION

- 4.1.1.1. Chapter 7 (Marine Water and Sediment Quality) of the 2019 ES (APP-122) reports the assessment and likely significant effects arising from the Proposed Development on marine water and sediment quality.
- 4.1.1.2. A full review of Chapter 7 (Marine Water and Sediment Quality) of the 2019 ES (APP-122) has been completed.
- 4.1.1.3. In agreement with relevant stakeholders, only two potential impacts on marine water and sediment quality were scoped into the assessment presented in the 2019 ES. These were:
- Temporary increase in SSC (construction, operation and decommissioning); and
 - Impacts from the resuspension of contaminated sediment (construction, operation and decommissioning).
- 4.1.1.4. The worst case scenarios and maximum parameters already assessed for these impacts in Chapter 7 are not altered through the inclusion of the CCF Crossing into the design of the Proposed Development and as such, these impacts have not been re-assessed.
- 4.1.1.5. The following sections of Chapter 7 of the 2019 ES remain unchanged and valid:
- study area;
 - legislation, policy and guidance;
 - scoping opinion and consultation;
 - assessment methodology;
 - baseline environment;
 - impact assessment;
 - proposed mitigation; and
 - residual effects.

4.2. CUMULATIVE AND TRANSBOUNDARY EFFECTS

- 4.2.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.
- 4.2.1.2. Although current information is limited, it is likely that the CCF development will be operational prior to construction of the Proposed Development. However, a precautionary approach is being undertaken that there may be potential for temporal overlap with the Proposed Development and therefore the potential for cumulative effects has been given further consideration should construction of the CCF development occur at the same time as the Proposed Development (and other relevant projects and plans in Appendix 7.4, APP-375). In this regard, as the CCF cable falls within the Zone of Influence ('ZOI') offshore (25 km), there is also potential for spatial overlap with the Proposed Development. However, given the small size of the optic fibre cable (only 40 mm in diameter) to be buried, the construction works would be small in scale, and as the CCF offshore construction period is predicted to be only c.12 days to cross the whole of the UK Marine Area, any contribution to cumulative impacts would be very short in duration and only temporary. Accordingly, any potential cumulative effects will not be significant when considered with the Proposed Development and the other relevant projects and plans considered in Chapter 7 (and Appendix 7.4, APP-375) and the conclusions presented in Section 7.7 of Chapter 7 and Chapter 29 (APP-144) of the 2019 ES in regard to inter-project effects are unchanged and remain valid.
- 4.2.1.3. The conclusions stated in Chapter 7 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.
- 4.2.1.4. The conclusions stated in Section 7.7 of Chapter 7 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in relation to transboundary effects are unchanged and remain valid.

4.3. MARINE WATER FRAMEWORK DIRECTIVE ASSESSMENT

4.3.1. MINOR AMENDMENT TO MARINE WATER FRAMEWORK DIRECTIVE ASSESSMENT

- 4.3.1.1. Whilst reviewing Appendix 7.1 (Marine Water Framework Directive) (APP-372) of the 2019 ES, an error was noted in the figures used in the assessment of potential habitat loss in the Isle of Wight East water body (Section 1.7.2 of Appendix 7.1). The correct figures have been provided in the superseding text below (and in Appendix 1, document reference 7.8.2.1).

4.3.1.2. **Assessment of permanent habitat loss in the Isle of Wight East water body as a result of placement of rock protection:**

4.3.1.3. **Superseding Appendix 7.1 of the 2019 ES, paragraph 1.7.2.6:**

Permanent habitat loss as a result of rock placement is expected to incur a maximum loss of 0.66 km², which includes contingency for post construction repair and maintenance (Chapter 3 (Description of the Proposed Development)). Whilst it is not currently known where rock placement as non-burial protection will be required, it is assumed as a worst-case that it can occur anywhere along the cable route, affecting a proportion of several habitats, or all placed in one habitat type.

4.3.1.4. The changes compared to the 2019 ES (APP-372) are:

- Paragraph 1.7.2.6 originally stated that the maximum total area impacted through habitat loss as a result of rock placement was 0.37 km². This value is incorrect and is revised to 0.66 km². This figure of 0.66 km² is the worst case area of maximum habitat loss that could occur in the Isle of Wight East water body if all non-burial protection was placed within that water body. This figure does not include however, the quantities of cable protection required at either the Atlantic Cable Crossing (0.04 km²) or CFF Crossing (0.04 km²), as neither of these crossings are located within WFD water bodies.

4.3.1.5. **Assessment of permanent habitat loss in the Isle of Wight East water body as a result of placement of rock protection. Superseding Appendix 7.1 of the 2019 ES, paragraph 1.7.2.7:**

Should all rock placement be required in the Isle of Wight East water body, this loss represents 1.24% of subtidal soft sediments (A5.2, A5.3 and A5.4) based on figures provided in the summary table accompanying EA (2017) guidance. Subtidal mixed sediment habitat is widely available in the Isle of Wight East water body. The potential habitat loss is therefore not expected to affect the overall availability or functioning of the wider habitat in Isle of Wight East.

4.3.1.6. The changes compared to the 2019 ES (APP-372) are:

- Amended the percentage loss of subtidal soft sediment from <1% to 1.24% that would occur should all cable protection (other than that required for cable crossings) be placed in the Isle of Wight East water body.

4.3.1.7. These changes identified above do not alter the conclusions of the assessment presented in paragraphs 1.7.2.7 and 1.7.2.8 of Appendix 7.1 (APP-372).

4.3.1.8. Furthermore, as the location of the CCF Crossing is mid-Channel close to the European Economic Zone ('EEZ') boundary line, no pathway has been identified by which the changes to the Proposed Development outlined in Section 2.3 of this document will impact any Water Framework Directive ('WFD') water bodies.

- 4.3.1.9. Therefore, the conclusions of the assessment presented in Appendix 7.1 (Marine Water Framework Directive) (APP-372) of the 2019 ES are unchanged and remain valid.

4.4. CONCLUSION

Having taken into account the CCF development and additional cable crossing incorporated into the Proposed Development, there would be no change in any residual effects to marine water and sediment quality (or WFD Assessment) and therefore the conclusions of Chapter 7 and Appendix 7.1 in the 2019 ES remain unchanged.

5. INTERTIDAL AND BENTHIC HABITATS

5.1. INTRODUCTION

5.1.1.1. Chapter 8 (Intertidal and Benthic Habitats) of the 2019 ES (APP-123) reports the assessment and likely significant effects arising from the Proposed Development on intertidal and benthic habitats.

5.1.1.2. A full review of Chapter 8 (Intertidal and Benthic Habitats) of the 2019 ES (APP-123) has been completed and updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development.

5.1.1.3. The following sections of Chapter 8 to the 2019 ES remain unchanged and valid:

- study area;
- legislation, policy and guidance;
- scoping opinion and consultation;
- assessment methodology;
- baseline environment;
- proposed mitigation; and
- residual effects.

5.1.1.4. The impacts considered to be relevant for re-assessment are:

- Operation (incl. repair and maintenance):
 - Habitat Loss.

5.1.1.5. The sections below describe the changes and updates to corresponding sections of Chapter 8 of the 2019 ES as a result of the updates to the Proposed Development described in Section 2.3 of this document.

5.2. IMPACT ASSESSMENT

5.2.1.1. The worst case scenario/s for this impact have been revised to reflect the inclusion of another cable crossing within the marine design of the Proposed Development

5.2.1.2. **Superseding 2019 ES, Chapter 8, Table 8.6: Worst Case Design Parameters:**

Table 5.1 - Update to Table 8.6 – Worst Case Design Parameters

Potential Impact	Worst case parameters used in this assessment
Operation (incl. repair and maintenance)	
Habitat Loss	<p>Maximum area/footprint of original habitat loss is 0.74 km² due to non-burial protection.</p> <p>Based on worst case non-burial protection for rock placement during construction (0.33 km²) and maximum footprint for Atlantic and CCF crossings protection (0.076 km²) and HDD permanent rockfill (0.0009 km²). This maximum footprint also allows an addition 10% rock placement non-burial contingency (0.33 km²) for if further non-burial protection is required during maintenance/repair activities during a 15-year period post construction.</p>

- 5.2.1.3. The changes compared to the 2019 ES (APP-123) are:
- To accommodate the additional cable crossing, the indicative maximum footprint of cable protection for cable crossings only has increased from 37,800 m² for the Atlantic Crossing alone to 75,600 m² (i.e. 0.076 km² when rounded up) for both the Atlantic and CCF crossings (37,800 x 2 = 75, 600).
 - Accordingly, to accommodate both cable crossing designs into the Proposed Development, the indicative maximum footprint of cable protection for all non-burial protection activities during construction and operation has increased from c.0.7 km² to 0.74 km² (i.e. the additional 37,800 m² (0.0378 km²) required for the CCF Crossing has been rounded up to 0.04 km² and added to the maximum footprint of 0.7 km²).

5.2.2. HABITAT LOSS

5.2.2.1. Assessment of impact during operation (including maintenance and repair). Superseding 2019 ES, paragraph 8.6.5.6:

The maximum footprint of impact is 0.74 km² and it has the potential to impact any of the habitats identified within the UK Marine Cable Corridor as the final route within the Marine Cable Corridor will be confirmed during final route design. This maximum footprint also allows a 10% rock placement non-burial contingency, in case further non-burial protection is required during maintenance/repair activities during operation.

- 5.2.2.2. The changes compared to the 2019 ES (APP-123) are:
- Amended the maximum total area impacted through habitat loss from 0.7 km² to 0.74 km² resulting from CCF crossing.

5.2.2.3. **Assessment of impact during operation (including maintenance and repair). Superseding 2019 ES, paragraph 8.6.5.10:**

The greatest amount of coarse sediment habitat that could be lost due to non-burial protection is 0.74 km². This accounts for 1.54% of the total area of coarse sediment habitat within the UK Marine Cable Corridor. This equates to 0.003% of available habitat within the eastern Channel.

5.2.2.4. The changes compared to the 2019 ES (APP-123) are:

- Amending the maximum total area impacted through habitat loss (from 0.7 km² to 0.74 km²) resulting from CCF Crossing and updated percentages (updated from 1.45% to 1.54% of total area of coarse sediment. This still equates to 0.003% of available habitat within the eastern Channel).

5.2.2.5. No changes to the conclusions of the assessments presented in the 2019 ES (APP-123) are identified from the addition of another cable crossing (considered **not significant** for habitat loss). Habitat loss will only affect a very small proportion of the available habitat which will not lead to the complete loss (local or regional) of habitats or affect the function of remaining habitats.

5.2.2.6. Accordingly, the conclusions made in paragraphs 8.6.5.19 to 8.6.5.21 of the 2019 ES are unchanged and remain valid.

5.3. CUMULATIVE AND TRANSBOUNDARY EFFECTS

5.3.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.

5.3.1.2. Cumulative effects that were of principal concern were those resulting from construction activities that contributed to a predicted greater magnitude, duration and extent of impacts, and effects during operation or decommissioning were considered to be the same, or less.

5.3.1.3. Although current information is limited, it is likely that the CCF development will be operational prior to construction of the Proposed Development. However, a precautionary approach is being undertaken that there may be potential for temporal overlap with the Proposed Development and therefore the potential for cumulative effects has been given further consideration should construction of the CCF development occur at the same time as the Proposed Development (and other relevant projects and plans in Appendix 8.4, APP-380).

5.3.1.4. Although there may be temporal overlap between the construction of the CCF development with the Proposed Development, the temporal overlap will be short in duration (offshore construction of CCF development is 12 days) and it is considered that the small and linear spatial scale of any effects from the CCF development, in

addition to those arising from the Proposed Development and other relevant projects considered (in Appendix 8.4, APP-380) will not contribute to the generation of significant cumulative (inter-project) effects or transboundary effects on benthic or intertidal ecology receptors. It is therefore considered that the conclusions within Section 8.7 of Chapter 8 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.

- 5.3.1.5. The conclusions stated in Chapter 8 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.

5.4. PROPOSED MITIGATION

- 5.4.1.1. No potentially significant effects are predicted to result from the additional cable crossing and therefore, no additional mitigation is proposed beyond what was already proposed within Section 8.8 of Chapter 8 of the 2019 ES which is unchanged and remains valid.

5.5. MARINE CONSERVATION ZONE ASSESSMENT

- 5.5.1.1. As can be seen in Figure 8.2, Rev 02 (REP1-066), the location of the CCF Crossing is mid-Channel closer to the EEZ boundary line, and is too far from any Marine Conservation Zones ('MCZs') for any direct or indirect impacts resulting from the inclusion of the additional cable crossing to affect any MCZs. Accordingly, the assessment presented in Appendix 8.5 (Marine Conservation Zone Assessment) (APP-381) of the 2019 ES is unchanged and remains valid.

5.6. CONCLUSION

Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, there would be no change in any residual effects to intertidal and benthic habitats and therefore the conclusions of Chapter 8 and Appendix 8.5 in the 2019 ES remain unchanged.

6. FISH AND SHELLFISH

6.1. INTRODUCTION

6.1.1.1. Chapter 9 (Fish and Shellfish) of the 2019 ES (APP-124) reports the assessment and likely significant effects arising from the Proposed Development on fish and shellfish receptors.

6.1.1.2. A full review of Chapter 9 (Fish and Shellfish) of the 2019 ES (APP-124) has been completed and updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development.

6.1.1.3. The following sections of Chapter 9 to the 2019 ES remain unchanged and are considered to remain valid:

- study area;
- legislation, policy and guidance;
- scoping opinion and consultation;
- assessment methodology;
- baseline environment; and
- residual effects.

6.1.1.4. The impacts considered to be relevant for re-assessment:

- Operation (incl. repair and maintenance):
 - Permanent Habitat Loss.

6.1.1.5. The sections below describe the changes and updates to corresponding sections of Chapter 9 of the 2019 ES as a result of the updates to the Proposed Development described in Section 2.3 of this document.

6.2. IMPACT ASSESSMENT

6.2.1.1. The worst case scenario/s for these impacts have been revised to reflect the inclusion of another cable crossing within the marine design of the Proposed Development.

6.2.1.3. Superseding 2019 ES, Chapter 9, Table 9.9: Worst Case Design Parameters:

Table 6.1 - Update to Table 9.9 – Worst Case Design Parameters

Potential Impact	Worst case parameters used in this assessment
Operation (incl. repair and maintenance)	
Permanent habitat loss	<p>Marine Cable Corridor: Based on worst case non-burial protection for rock placement during construction (0.33 km²) and maximum footprint for Atlantic and CCF crossing protection (0.076 km²).</p> <p>The maximum footprint also allows an additional 10% rock placement non-burial contingency (0.33 km²) for if further non-burial protection is required during maintenance/repair activities during a 15-year period post construction.</p> <p>Landfall: The worst case considers non-burial protection (rock infill) will be used to permanently replace (after removal of temporary rock bags) excavated sediment at HDD entry/exit pit. Total area of protection 0.0009 km².</p> <p>Maximum area/footprint of habitat loss is 0.74 km² due to non-burial protection.</p>

6.2.1.4. The changes compared to the 2019 ES (APP-124) are:

- To accommodate the additional cable crossing, the indicative maximum footprint of cable protection for cable crossings only has increased from 37,800 m² for the Atlantic Crossing alone to 75,600 m² (i.e. 0.076 km²) for both the Atlantic and CCF crossings (37,800 x 2 = 75,600).
- Accordingly, to accommodate both cable crossing designs into the Proposed Development, the indicative maximum footprint of cable protection for all non-burial protection activities during construction and operation has increased from c.0.7 km² to 0.74 km² (i.e. the additional 37,800 m² (0.0378 km²) required for the CCF Crossing has been rounded up to 0.04 km² and added to the maximum footprint of 0.7 km²).

6.2.2. PERMANENT HABITAT LOSS

**6.2.2.1. Assessment of impact during operation (including maintenance and repair).
Superseding 2019 ES, paragraph 9.6.5.10:**

Permanent habitat loss will result where cable protection is placed on sediment habitats. Thus, habitat is lost and replaced by hard substrate. The use of cable

protection will occur where the cable needs to be surface laid, crossing other cables, at HDD entry/exit points and in areas where target burial depths cannot be attained. The locations where remedial cable protection might be required (i.e. locations where the cable cannot be adequately buried) are yet to be determined however, a worst case assumes cable protection may be required up to 23 km along the UK Marine Cable Corridor with a total footprint of 0.74 km². This footprint also allows for some cable protection contingency to cover the use of cable protection for maintenance and repair activities post construction and for the cable crossing and HDD duct protection.

The changes compared to the 2019 ES (APP-124) are:

- Update to the total area for worst case habitat loss resulting from cable protection from 0.7 km² to 0.74 km².

6.2.2.2. Assessment of impact during operation (including maintenance and repair).
Superseding 2019 ES, paragraph 9.6.5.14:

*The king scallop is an important commercial shellfish with the highest landings in the ICES rectangles of 29F0 and 29E9. It prefers areas of clean firm sand, fine or sandy gravel and also muddy sand, although Brand (1991) found that the highest abundances are usually found in areas with little mud. The MarESA sensitivity assessment by MarLIN (Marshall and Wilson, 2008) identifies that scallops have a high recoverability and moderate sensitivity to substratum loss. In addition, the sediments that scallops inhabit are widely available in the Channel and the area affected by cable protection represents only a tiny proportion of this (0.74 km²). Given the low magnitude and spatial extent of impact, it is considered that effects from permanent habitat loss is **not significant** for king scallop.*

6.2.2.3. The changes compared to the 2019 ES (APP-124) are:

- Update to the total area for worst case habitat loss resulting from cable protection from 0.7 km² to 0.74 km².

6.2.2.4. **Assessment of impact during operation (including maintenance and repair).
Superseding 2019 ES, paragraph 9.6.5.16:**

Herring are a pelagic species but rely spawn and lay their eggs on certain types of seabed sediment. It is this stage where a possible route to impact exists from permanent habitat loss. As previously mentioned, the central Channel is an area of very high potential for herring spawning (Coull et al., 1998; Ellis et al., 2012 and RPS, 2013). The area of 'low' spawning potential within the South Marine Plan occupies an area of 2335 km²; low to medium equates to 4443.7 km², and 'high' occupies an area of 480.2 km². Therefore, the worst-case habitat loss resulting from cable protection of 0.74 km² is considered to be very small. Given the extensive spawning habitat available in the Channel, the small extent of the impact

*and herrings ability to choose other suitable habitat in the immediate vicinity, no significant effects on population size are expected. Therefore, it is considered that potential effects from permanent habitat loss on herring will be **not significant**.*

- 6.2.2.5. The changes compared to the 2019 ES (APP-124) are:
- Update to the total area for worst case habitat loss resulting from cable protection from 0.7 km² to 0.74 km².
- 6.2.2.6. No changes to the conclusions of the assessments presented in Chapter 9 of the 2019 ES (APP-124) are identified from the addition of another cable crossing (**not significant** for habitat loss). Habitat loss will only affect a very small proportion of the available habitat which will not lead to the complete loss (local or regional) of habitats or affect the function of remaining habitats that fish and shellfish species rely upon. Accordingly, the conclusions made in paragraphs 9.6.5.10 to 9.6.5.21, are unchanged and remain valid.

6.3. CUMULATIVE AND TRANSBOUNDARY EFFECTS

- 6.3.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.
- 6.3.1.2. The cumulative assessment considered that, without mitigation, only those impacts that had potential to affect herring spawning during construction (no potential cumulative impacts were identified during operational activities) within the defined spawning grounds had the potential to lead to significant cumulative effects, namely:
- Temporary Habitat disturbance/loss within herring spawning grounds;
 - Temporary increase in Suspended Sediment Concentrations ('SSC') and smothering within herring spawning grounds; and
 - Noise and vibration within herring spawning grounds.
- 6.3.1.3. The CCF development falls within the Zone Of Influence ('ZOI') for fish and shellfish receptors and, as a precautionary approach is being undertaken, consideration of a potential temporal overlap with the Proposed Development has been considered as construction works for the CCF development could be occurring at the same time as the construction works of the Proposed Development and the other projects and plans considered within Section 9.7 of Chapter 9 (also see Appendix 9.2, APP-383) of the 2019 ES.
- 6.3.1.4. Limited information is known about the details of the CCF development at the time of writing as their marine licence application has not yet been submitted to the MMO. However, given the information available and in reviewing the cumulative assessment during the construction (and decommissioning) stage, it is considered that any potential cumulative effects would be limited to the herring spawning

grounds. The existing cumulative assessment has already taken a highly conservative approach in assuming habitat disturbance over the entirety of the areas of the aggregate projects that are in the herring spawning grounds. Given the small size of the CCF optic fibre cable (only 40 mm in diameter) to be buried, the CCF construction works would be small in scale and would not contribute to disturbance within this area so as to result in significant cumulative effects. In addition, as the CCF offshore construction period is predicted to be only 12 days to cross the whole of the UK Marine Area, then any impacts from noise or increased SSC resulting from the CCF development would be very short in duration and temporary and would not contribute levels of impact that would result in significant cumulative effects with the other projects and plans considered in Section 9.7 of Chapter 9 and Chapter 29 of the 2019 ES.

- 6.3.1.5. Therefore, it is concluded that the magnitude of any potential cumulative impacts from the CCF development would be negligible, such that consideration of them along with the Proposed Development and other projects does not result in any cumulative effects that are significant such that the conclusions presented in Section 9.7 of Chapter 9 of the 2019 ES are unchanged and remain valid.
- 6.3.1.6. Furthermore, it is important to note that subsequent to the undertaking of the cumulative assessment in the 2019 ES (APP-124), construction of the Proposed Development will now be subject to mitigation to protect herring in the form of a timing restriction for a 4-week period (15 December – 15 January) where no seabed preparation or cable laying activities can take place between Kilometre Point ('KP') 90 and KP 109 of the UK Marine Cable Corridor. Many of the aggregate projects within this location also have restrictions on works to avoid sensitive herring spawning periods and it is expected that the CCF development would also be subject to this mitigation, if required, following submission and determination of the marine licence application.
- 6.3.1.7. With this mitigation in place it is considered that there is no potential for significant cumulative effects to arise from the construction, operation or decommissioning of the Proposed Development with any other relevant plan or project.
- 6.3.1.8. The conclusions stated in Chapter 9 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.
- 6.3.1.9. The conclusions stated in Section 9.7.5 of Chapter 9 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in relation to transboundary effects are unchanged and remain valid.

6.4. PROPOSED MITIGATION

6.4.1.1. No potentially significant effects are predicted to result from the CCF development or additional cable crossing and therefore, no additional mitigation is proposed beyond what was already proposed within Chapter 9 of the 2019 ES which is unchanged and remains valid and in paragraph 6.4.1.2 below.

6.4.1.2. **Supplementary to 2019 ES, paragraph 9.8.1.4:**

Nevertheless, the MMO has requested additional mitigation to protect herring in the form of a timing restriction for a 4 week period (15 December – 15 January) where no seabed preparation or cable laying activities can take place between KP 90 and KP 109 of the Marine Cable Corridor. Due to the location of the CCF Crossing, this timing restriction will also be applicable to the preparation and construction of this cable crossing.

6.5. MARINE CONSERVATION ZONE ASSESSMENT

6.5.1.1. As can be seen in Figure 8.2, Rev 02 (REP1-066) the location of the CCF Crossing is mid-Channel closer to the EEZ boundary line and is a considerable distance from any Marine Conservation Zones ('MCZs') and too far for any direct or indirect effects resulting from the inclusion of the additional cable crossing to occur to MCZs. Accordingly, the assessment presented in Appendix 8.5 (Marine Conservation Zone Assessment) (APP-381) of the 2019 ES is considered to be unchanged and remains valid.

6.6. CONCLUSION

Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, there would be no change in any residual effects to fish and shellfish receptors and therefore the conclusions of Chapter 9 and Appendix 8.5 in the 2019 ES remain unchanged.

7. MARINE MAMMALS AND BASKING SHARKS

7.1. INTRODUCTION

- 7.1.1.1. Chapter 10 (Marine Mammals and Basking Sharks) of the 2019 ES (APP-125) reports the assessment and likely significant effects arising from the Proposed Development on marine megafauna.
- 7.1.1.2. A full review of Chapter 10 (Marine Mammals and Basking Sharks) of the 2019 ES (APP-125) has been completed.
- 7.1.1.3. In agreement with relevant stakeholders, only two potential impacts on marine megafauna were scoped into the assessment presented in the 2019 ES. These were:
- Increased anthropogenic noise from geophysical survey and positioning equipment which emits sound (construction, operation and decommissioning); and
 - Associated HDD work: Increased anthropogenic noise (construction and decommissioning).
- 7.1.1.4. The worst case scenarios and maximum parameters already assessed for these impacts in Chapter 10 are not altered through the inclusion of the CCF Crossing into the design of the Proposed Development and as such, these impacts have not been re-assessed.
- 7.1.1.5. During post-PEIR consultation (see Table 10.1 of Chapter 10 of the 2019 ES), Natural England ('NE') confirmed that they agreed with the scope of the assessment and that sufficient evidence had been provided for the following potential impacts to be scoped out:
- Increased vessel noise (construction, operation and decommissioning);
 - Collision with vessels (construction, operation and decommissioning);
 - Anthropogenic noise from geotechnical surveys, horizontal directional ('HD') drilling (hereafter referred to as HD drilling), seabed preparation and cable installation activities (construction and decommissioning); and
 - EMF (operation).
- 7.1.1.6. The updates to the Proposed Development described in Section 2.3 of this document are relevant only to the first three of the potential impacts which were scoped out. However, due to the small scale and the short duration of works required for the CCF

Crossing, it is considered that the scoping out these impacts from the ES remains valid.

7.1.1.7. Accordingly, the following sections of Chapter 10 of the 2019 ES remain unchanged and are considered to remain valid:

- study area;
- legislation, policy and guidance;
- scoping opinion and consultation;
- assessment methodology;
- baseline environment;
- impact assessment;
- proposed mitigation; and
- residual effects.

7.2. CUMULATIVE AND TRANSBOUNDARY EFFECTS

7.2.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.

7.2.1.2. Although current information is limited, it is likely that the CCF development will be operational prior to construction of the Proposed Development. However, a precautionary approach is being undertaken that construction (using noise emitting devices) of the CCF development may occur at the same time as the Proposed Development. In this regard, the CCF cable falls within the Zone of Influence ('ZOI') for marine mammals (10 km) so there is also potential for spatial overlap with the Proposed Development. However, in considering the scale and nature of the CCF development, along with the other relevant projects and plans considered in Chapter 10 (and Appendix 10.2, APP-385), any potential cumulative effects will be **not significant** as the CCF offshore construction period is predicted to be only c.12 days and subsequent maintenance activity will be similar in scale or less than installation activities. Although the CCF development will involve sound-emitting activities during construction and maintenance activities, there is no potential for it to induce the onset of auditory injury and, should any disturbance occur, it is predicted to be of very short duration and temporary. It is therefore considered that the conclusions within Section 10.7 of Chapter 10 and Chapter 29 (APP-144) of the 2019 ES in relation to inter-projects effects are unchanged and remain valid.

7.2.1.3. The conclusions stated in Chapter 10 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.

7.2.1.4. The conclusions stated in Section 10.7 of Chapter 10 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in relation to transboundary effects are unchanged and remain valid.

7.3. CONCLUSION

7.3.1.1. Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, there would be no change in any residual effects on marine megafauna receptors and therefore the conclusions of Chapter 10 in the 2019 ES remain unchanged.

7.4. SUPPLEMENTARY INFORMATION IN RESPONSE TO EXQ2 – MG2.1.1

7.4.1.1. Further to a request from Cefas and the MMO to undertake an assessment of cumulative sound exposure ('SELcum') for the vibro-hammering of trestles and steel casings at Landfall, the Applicant has as requested, undertaken such an assessment in accordance with the latest National Oceanic and Atmospheric Administration ('NOAA') 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0).

7.4.1.2. The assessment is presented below and in Appendix 2 (document reference 7.8.2.2) and was submitted to Cefas and the MMO on 26 November 2020. The MMO has since provided feedback that they are content with the assessment undertaken and the conclusions made. Reflecting the request in the Examining Authority Written Questions, this information has been submitted into Examination in this document.

7.4.2. CUMULATIVE SOUND ASSESSMENT

7.4.2.1. In order to assess the risk of cumulative exposure to noise from vibro-hammering at the marine Horizontal Directional Drilling ('HDD') landfall exit/entrance, the range of the zone of potential impact ('SELcum') was estimated for each marine mammal hearing group using the following:

- Appendix D of the NOAA (2018) guidance;
- National Marine Fisheries Service ('NMFS') User Spreadsheet Tool (NMFS, 2020); and
- NMFS Instruction Manual for User Spreadsheet Manual (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>).

7.4.2.2. NMFS suggested values were used for the weighting factor adjustment and transmission loss coefficient (NMFS Instruction Manual for User Spreadsheet Manual; e-mail response from NOAA dated 13/11/2020).

- 7.4.2.3. Information on sound pressure levels (SPL) was taken from four different sources which have previously been referred to in the context of these works:
- Watson & Hillhouse (2019)¹;
 - Burgess *et al.* (2005);
 - Blackwell (2005); and
 - Graham *et al.* (2017)².
- 7.4.2.4. The conditions under which each of these published datasets were collected did not fully match those anticipated at the marine HDD exit therefore, multiple scenarios using each of the four Sound Pressure Levels ('SPLs') were run in order to generate a range of values and provide context to worst case. To ensure a worst-case scenario was assessed, although works are planned in 12-hour shifts, scenarios assuming both one and two-12 h shifts per 24 h period were run (see Appendix 2, document reference 7.8.2.2).
- 7.4.2.5. The scenarios considered to represent the Most Likely ('ML'; Scenario 2) and Worst Case ('WC'; Scenario 7) scenarios for the vibro-hammering activity were identified. The estimated range of the zone of potential impact (cumulative Permanent Threshold Shift ('PTS') isopleth, equivalent to SELcum) for each marine mammal hearing group for each scenario is shown in Table 7.1 below. It should be noted that, because animal movement has not been accounted for (i.e. it has been assumed that the animal is and remains stationary), these ranges are considered to be highly precautionary.

¹ SPL in air converted to SPL in water (see paragraph 10.6.4.21 of Chapter 10 (APP-125) of the ES).

² It should be noted that source level was considered by the authors of this paper to be 'unexpectedly high'.

Table 7.1 - Estimated ranges of the zones of potential impact (cumulative PTS isopleths) for each marine mammal hearing group. The grey shading indicates the scenarios considered to represent the most likely (ML) and worst case (WC) scenarios

Hearing group	Cumulative PTS isopleth to threshold (m)						
	<u>Scenario 1</u> SPL: Burgess (greatest 'more typical' value) Duration: 12 h	<u>Scenario 2</u> <u>(ML)</u> SPL: Burgess (greatest 'more typical' value) Duration: 24 h	<u>Scenario 3</u> SPL: W&H Duration: 12 h	<u>Scenario 4</u> SPL: W&H Duration: 24 h	<u>Scenario 5</u> SPL: Burgess (max value) Duration :24 h	<u>Scenario 6</u> SPL: Blackwell Duration :24 h	<u>Scenario 7</u> <u>(WC)</u> SPL: Graham Duration :24 h
Low frequency cetacean	20.0	31.7	4.5	7.1	79.6	504.4	662.6
Mid frequency cetacean	1.8	2.8	0.4	0.6	7.1	44.7	58.7
High frequency cetacean	29.5	46.8	6.6	10.6	117.6	745.7	979.6
Phocid pinniped	12.1	19.3	2.7	4.3	48.4	306.6	402.7

- 7.4.2.6. In order to estimate the number of animals which have the potential to be present within the cumulative PTS isopleths (using $\text{area} = \pi r^2$), density estimates (from Block C of the SCANS III survey for minke whale and harbour porpoise³ and the Sea Mammal Research Unit ('SMRU') seal usage maps for harbour seals⁴) were used (Table 7.2).
- 7.4.2.7. Less than one individual of each species was estimated to be at risk of cumulative exposure to noise from vibro-hammering at the marine HDD exit/entrance under both the most likely (ML) and worst case (WC) scenarios.

Table 7.2 - Estimated number of individuals which have the potential to be affected

Local species	Density estimate (animals/km ²)	Cumulative PTS isopleth to threshold (m)		Estimated number of animals within cumulative PTS isopleth	
		ML	WC	ML	WC
Minke whale	0.002	31.7	662.6	<1	<1
Harbour porpoise	0.213	46.8	979.6	<1	<1
Harbour seal	0.04	19.3	402.7	<1	<1

- 7.4.2.8. In addition, the presence of the construction plant and structure(s) in the water is likely to lead to small-scale temporary displacement meaning that it is very unlikely that animals will be present within these small cumulative PTS isopleths/susceptible to cumulative PTS.
- 7.4.2.9. Therefore, it is concluded that the potential for cumulative PTS (SEL_{cum}) from the proposed vibro-hammering work to arise in individuals from any of the marine mammal hearing groups is negligible/nil. In addition, it should be noted that the duration of the proposed vibro-hammering work at each duct is short (8 h for the trestles and 32 h for the casings).

Based on this supplementary information, it is considered that the conclusions of Chapter 10 of the 2019 ES remain valid, i.e. that any effects resulting from this potential impact (increased anthropogenic noise from vibro-hammering at the marine HDD location) will be **not significant**.

³ As noted in Section 10.5.3 of Chapter 10 of the ES, minke whale and harbour porpoise are the only cetacean species for which Channel-specific density estimates are available (estimates taken from SCANS III; Hammond *et al.*, 2017).

⁴ The harbour seal density estimate was taken from the SMRU seal usage maps (Russell *et al.*, 2017). Grey seal density in the relevant 5x5 km grid cell was zero.

8. MARINE ORNITHOLOGY

8.1. INTRODUCTION

8.1.1.1. Chapter 11 (Marine Ornithology) of the 2019 ES (APP-126) reports the assessment and likely significant effects arising from the Proposed Development on marine ornithology receptors.

8.1.1.2. A full review of Chapter 11 (Marine Ornithology) of the 2019 ES (APP-126) has been completed and updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development.

8.1.1.3. The following sections of Chapter 11 to the 2019 ES remain unchanged and are considered to remain valid:

- study area;
- legislation, policy and guidance;
- scoping opinion and consultation;
- assessment methodology;
- baseline environment;
- proposed mitigation; and
- residual effects.

8.1.1.4. The impacts considered to be relevant for re-assessment are:

- Construction (and Decommissioning):
 - Disturbance and displacement from construction plant and support vessels.
- Operation (incl. repair and maintenance);
 - Indirect effects as a consequence of seabed disturbance and/or loss on prey availability.

8.1.1.5. The sections below describe the changes and updates to corresponding sections of Chapter 11 of the 2019 ES as a result of the updates to the Proposed Development described in Section 2.3 of this ES Addendum 2.

8.2. IMPACT ASSESSMENT

8.2.1.1. The worst case scenario/s for these impacts have been revised to reflect the inclusion of another cable crossing within the marine design of the Proposed Development

8.2.1.2. **Superseding 2019 ES, Chapter 11, Table 11.10: Worst Case Design Parameters:**

Table 8.1 - Update to Table 11.10 – Worst Case Design Parameters

Potential Impact	Worst case parameters used in this assessment
Construction (& Decommissioning)	
Disturbance and displacement from construction plant and support vessels	<p>Vessel movements</p> <p>An indicative number of 827 vessel movements (i.e. return trips) over a 30-month period, on a 24/7 basis. This is based on seabed preparation (65 movements), cable burial (126 movements) and HDD installation (636 movements) occurring simultaneously.</p>
Operation (incl. repair and maintenance)	
Indirect effects as a consequence of seabed disturbance and/or loss on prey availability	<p>Seabed loss</p> <p>Total area of original habitat loss is 0.74 km² due to non-burial protection.</p> <p>This is based on worst case non-burial protection for rock placement (0.33 km²) during construction and maximum footprint for crossing protection (0.076 km²) and HDD permanent rockfill (0.0009 km²).</p> <p>This maximum footprint also allows an additional 10% rock placement non-burial contingency (0.33 km²) for if further non-burial protection is required during maintenance/repair activities during a 15-year period post construction.</p>

- 8.2.1.3. The changes shown above in Table 9.1 compared to the 2019 ES (APP-126) are:
- To accommodate the additional cable crossing, the number of vessel movements associated with seabed preparation has increased from 63 to 65.
 - Accordingly, to accommodate the additional cable crossing, the total number of vessel movements has increased from 825 to 827.
 - To accommodate the additional cable crossing, the indicative maximum footprint of cable protection for cable crossings only has increased from 37,800 m² for the Atlantic Crossing alone to 75,600 m² (i.e. 0.076 km²) for both the Atlantic and CCF crossings (37,800 x 2 = 75,600).
 - Accordingly, to accommodate both cable crossing designs into the Proposed Development, the indicative maximum footprint of cable protection for all non-

burial protection activities during construction and operation has increased from c.0.7 km² to 0.74 km² (i.e. the additional 37,800 m² (0.0378 km²) required for the CCF Crossing has been rounded up to 0.04 km² and added to the maximum footprint of 0.7 km²).

8.2.2. DISTURBANCE AND DISPLACEMENT FROM CONSTRUCTION PLANT AND SUPPORT VESSELS

8.2.2.1. Assessment of impact during construction (and decommissioning). Superseding 2019 ES, paragraphs 11.6.7.14, 11.6.7.41, 11.6.7.81 and 11.6.7.115:

- Where the value of c.825 is used as the maximum parameter for vessel movements this should now be read as c.827.

8.2.2.2. No changes to the assessments undertaken for relevant receptors presented in Chapter 11 of the 2019 ES (APP-126) are predicted as a result of an increase of two vessel movements (i.e. two return trips associated with the additional cable crossing). In addition, it is likely that each vessel will only be present in any one area of the rolling safe passing distance for very short durations (hours to days). Furthermore, vessel traffic levels in the Channel and Solent are already high (see Chapter 13 of the 2019 ES (APP-126)). Accordingly, the conclusions reached in paragraphs 11.6.7.14, 11.6.7.42, 11.6.7.82-83 and 11.6.7.116 are unchanged and remain valid.

8.2.3. INDIRECT EFFECTS AS A CONSEQUENCE OF SEABED DISTURBANCE AND/OR LOSS ON PREY AVAILABILITY

8.2.3.1. Assessment of impact during operation (including maintenance and repair). Superseding 2019 ES, paragraphs 11.6.7.26, 11.6.7.53, 11.6.7.94 and 11.6.7.127:

- Where the value of 0.7 km² is used as the maximum parameter for cable protection this should now be read as 0.74 km².

8.2.3.2. No changes to the assessments undertaken for relevant receptors presented in Chapter 11 of the 2019 ES (APP-126) are predicted from the increase in non-burial cable protection footprint of 0.04 km². The permanent loss of fish and shellfish habitat as a result of the additional cable crossing is not predicted to significantly affect prey availability for any marine ornithology receptor since these measures remain very limited in spatial extent. Accordingly, the conclusions reached in paragraphs 11.6.7.28, 11.6.7.55, 11.6.7.96 and 11.6.7.129 are unchanged and remain valid.

8.3. CUMULATIVE AND TRANSBOUNDARY EFFECTS

8.3.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.

8.3.1.2. Although current information is limited, it is likely that the CCF development will be operational prior to construction of the Proposed Development. However, a

precautionary approach is being undertaken that there may be potential for temporal overlap with the Proposed Development and therefore the potential for cumulative effects has been given further consideration should construction of the CCF development occur at the same time as the Proposed Development (and other relevant projects and plans in Appendix 11.2, APP-387).

- 8.3.1.3. Given the scale and nature of the CCF development, along with the other projects and plans, any cumulative effects on marine ornithology receptors from the CCF development (i.e. potential disturbance and effects on prey availability) are not considered to be significant as they will be highly localised (spatial overlap is limited to the maximum footprint of the cable crossing) and temporary in nature (with offshore construction of the CCF development limited to a c.12 day period). Therefore, it is considered that the conclusions within Section 11.7 of Chapter 11 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.
- 8.3.1.4. The conclusions stated in Chapter 11 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in regard to intra-project cumulative effects are unchanged and remain valid.
- 8.3.1.5. The conclusions stated in Section 11.7 of Chapter 9 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in regard to transboundary effects are unchanged and remain valid.

8.4. PROPOSED MITIGATION

- 8.4.1.1. No potentially significant effects are predicted to result from the CFF development and additional cable crossing and therefore, no additional mitigation is proposed beyond what was already proposed within Section 11.8 of Chapter 11 of the 2019 ES which is considered to be unchanged and remains valid.

8.5. CONCLUSION

- 8.5.1.1. Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, it is considered that there would be no change in any residual effects to marine ornithology receptors and therefore the conclusions of Chapter 11 in the 2019 ES remain unchanged.

9. COMMERCIAL FISHERIES

9.1. UPDATED INFORMATION – JANUARY 2021

9.1.1.1. Chapter 12 (Commercial Fisheries) of the 2019 ES (APP-127) reports the assessment and likely significant effects arising from the Proposed Development on commercial fisheries receptors.

9.1.1.2. A full review of Chapter 12 (Commercial Fisheries) of the 2019 ES (APP-127) has been completed and updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development.

9.1.1.3. The following sections of Chapter 12 to the 2019 ES remain unchanged and are considered to remain valid:

- study area;
- legislation, policy and guidance;
- scoping opinion and consultation;
- assessment methodology;
- baseline environment; and
- residual effects.

9.1.1.4. The impacts considered to be relevant for re-assessment are:

- Construction (and Decommissioning):
 - Interference to normal fishing practices;
 - Navigational safety issues for fishing vessels;
- Operation (incl. repair and maintenance):
 - Complete/temporary loss or restricted access to established fishing grounds;
 - Complete/temporary displacement of fishing activity into other areas.

9.1.1.5. The sections below describe the changes and updates to corresponding sections of Chapter 12 of the 2019 ES as a result of the updates to the Proposed Development described in Section 2.3 of this document.

9.2. IMPACT ASSESSMENT

9.2.1.1. The worst case scenario/s for these impacts have been revised to reflect the inclusion of another cable crossing within the marine design of the Proposed Development.

9.2.1.2. **Superseding 2019 ES, Chapter 12, Table 12.7: Worst Case Scenarios:**

Table 9.1 - Update to Table 12.7 - Worst Case Scenarios

Potential Impact	Worst case parameters used in this assessment
Construction (& Decommissioning)	
Interference to normal fishing practices	<p>Fishing will occur in the vicinity of the UK Marine Cable Corridor at the same time as construction, which may lead to interference to normal fishing practices outside the exclusion zones.</p> <p>As set out at Chapter 3 (Description of Proposed Development), the indicative number of vessels required for seabed preparation, cable installation and HDD works which may be present at any one time is estimated at 51 if two campaigns were undertaken in parallel.</p> <p>There is an estimated number of vessel movements of 827 in total for the completion of construction.</p>
Navigational safety issues for fishing vessels	<p>Fishing will occur in the vicinity of the UK Marine Cable Corridor at the same time as construction, which may pose a navigational safety risk.</p> <p>Chapter 3 (Description of Proposed Development) identifies the indicative number of vessels required for seabed preparation, cable installation and HDD works which may be present on the Marine Cable Corridor at any one point is 51 if parallel campaigns were undertaken, with an estimated number of vessel movements of 827 for the duration of the works.</p>
Operation (incl. repair and maintenance)	
Complete /Temporary loss or restricted access to established fishing grounds	<p>The installation of non-burial cable protection may result in permanent loss of fishing grounds. Total area of habitat loss from non – burial protection is 0.74 km² due to non-burial protection during construction of the Marine Cables, the Atlantic Cable and CCF Crossings and HDD exit / entry point protection measures. This maximum footprint also allows an additional 10% rock placement non-burial contingency (additional 0.33 km²) required during maintenance/repair activities during a 15-year period post construction.</p>

9.2.1.3. The changes compared to the 2019 ES (APP-127) are:

- To accommodate the additional cable crossing, the total number of vessel movements has increased from 825 to 827.
- To accommodate the additional CCF cable crossing, the indicative maximum footprint of cable protection for all non-burial protection activities during construction and operation has increased from c.0.7 km² to 0.74 km² (i.e. the

additional 37,800 m² (0.0378 km²) required for the CCF Crossing has been rounded up to 0.04 km² and added to the maximum footprint of 0.7 km²).

9.2.2. INTERFERENCE TO NORMAL FISHING PRACTICES

9.2.2.1. Assessment of impact during construction (and decommissioning). 2019 ES, paragraphs 12.6.4.52 to 12.6.4.55:

9.2.2.2. No changes to the assessment presented in the 2019 ES (APP-127) are predicted from an increase of two vessel movements associated with the additional cable crossing and no changes are required to the text within paragraphs 12.6.4.52 to 12.6.4.55. Each vessel will only be present in any one area of the rolling safe passing distance for very short durations (hours to days). Furthermore, vessel traffic levels in the Channel and Solent are already high (see Chapter 13 of the 2019 ES (APP-127)). Accordingly, the conclusions reached in paragraph 12.6.4.55 are unchanged and remain valid.

9.2.3. NAVIGATIONAL SAFETY ISSUES FOR FISHING VESSELS

9.2.3.1. Assessment of impact during construction (and decommissioning). 2019 ES, paragraphs 12.6.4.56 to 12.6.4.62:

9.2.3.2. No changes to the assessment presented in the 2019 ES (APP-127) are proposed from an increase of two vessel movements associated with the additional cable crossing and no changes are required to the text within paragraphs 12.6.4.56 to 12.6.4.62. Each vessel will only be present in any one area of the rolling safe passing distance for very short durations (hours to days). Furthermore, vessel traffic levels in the Channel and Solent are already high (see Chapter 13 of the 2019 ES (APP-127)). Accordingly, the conclusions reached in paragraph 12.6.4.62 are unchanged and remain valid.

9.2.4. COMPLETE /TEMPORARY LOSS OR RESTRICTED ACCESS TO ESTABLISHED FISHING GROUNDS

9.2.4.1. Assessment of impact during operation (including maintenance and repair). 2019 ES, paragraphs 12.6.5.2 to 12.6.5.2.16:

9.2.4.2. No changes to the assessment presented in the 2019 ES (APP-127) are predicted from the increase in non-burial cable protection footprint of 0.04 km². The loss or restricted access to established fishing grounds as a result of the additional cable crossing is not predicted to alter the assessed magnitude of impact or significance of effects, as the additional cable protection measures will be very limited in spatial extent. For the relevant receptors of the local UK inshore fleet assessed, as described in paragraphs 12.6.5.2 to 12.6.5.10, best practice measures and consultation processes in regard to cable protection (i.e. Inshore Fisheries Working Group and see Section 9.4 of this document) will be employed to mitigate potential

effects, however the location of the CCF Crossing in mid-Channel close to the EEZ Boundary Line means interactions with these smaller vessels will be negligible as they have limited range and generally operate within the 12 nautical mile limit. For the relevant receptors of over 15 m UK and foreign vessels, the magnitude of impact and significance of effects also remains the same as described in paragraphs 12.6.5.11 to 12.6.5.16 as these vessels operate over large spatial ranges with a wide availability of alternative grounds to choose from.

9.2.5. COMPLETE /TEMPORARY DISPLACEMENT OF FISHING ACTIVITY INTO OTHER AREAS

9.2.5.1. Assessment of impact during operation (including maintenance and repair). Superseding 2019 ES, paragraph 12.6.5.17:

- Where the value of 0.7 km² is used as the maximum parameter for cable protection this should now be read as 0.74 km².

9.2.5.2. No changes to the assessment presented in the 2019 ES (APP-127) are proposed from the increase in non-burial cable protection footprint of 0.04 km². The displacement of fishing activity into other areas is linked to the impact of complete/temporary loss or restricted access to established fishing grounds, as explained above in Section 9.2.4. Displacement only has the potential to affect the most sensitive receptors however, namely the local UK inshore fleet and, the spatial extent and location of the CCF cable crossing means that interactions with these vessels will be negligible. Accordingly, the justification and conclusions made in paragraphs 12.6.5.17 to 12.6.5.19 are unchanged and remain valid.

9.3. CUMULATIVE AND TRANSBOUNDARY EFFECTS

9.3.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.

9.3.1.2. The cumulative assessment presented in Section 12.7 of Chapter 12 of the 2019 ES considered that, without mitigation, only those impacts that had potential to affect the UK inshore fishing fleet had the potential to lead to significant cumulative effects, namely:

- During construction (and decommissioning):
 - Temporary loss or restricted access to established fishing grounds;
 - Temporary displacement of fishing activity into other areas;
 - Interference to normal fishing activities;
 - Navigational safety issues for fishing vessels;
 - Temporary increases in steaming times; and

- Obstacles on the seabed.
- During Operation (including repair and maintenance):
 - Complete/temporary loss or restricted access to established fishing grounds;
 - Complete/temporary displacement of fishing activity into other areas; and
 - Obstacles on the seabed after maintenance/repair.

9.3.1.3. The CCF development falls within the ZOI of the inshore fishing fleet and although the CCF development extends far beyond the 12 nautical mile limit, as a precautionary approach is being undertaken, consideration of a potential temporal overlap with the Proposed Development has been undertaken as construction works for the CCF development could be occurring within 12 nautical miles from shore at the same time as the construction works of the Proposed Development and the other relevant projects and plans considered within Section 12.7.3 of Chapter 12 (and Appendix 12.3, APP-392) of the 2019 ES.

9.3.1.4. Potential CCF cable repair and maintenance works may also coincide with those of the Proposed Development and the other projects and plans considered.

9.3.1.5. Limited information is known about the details of the CCF development at the time of writing as their marine licence application has not yet been submitted to the MMO. However, given the information available and in reviewing the cumulative assessment during the construction (and decommissioning) stage, it is considered that any potential cumulative effects would be limited to marine areas within 12 nautical miles (i.e. the area within which these inshore vessels largely operate). Given the small size of the optic fibre cable (only 40 mm in diameter) to be buried, it is considered that the construction works would be small in scale and, as the CCF offshore construction period is predicted to be only c.12 days to cross the whole of the UK Marine Area, then any impacts would be very short in duration. Therefore, it is concluded that the magnitude of any potential cumulative impacts during construction (and decommissioning) from the CCF development would be negligible, such that consideration of them along with the Proposed Development and other projects would not result in any significant cumulative effects. As such, the conclusions presented in Section 12.7 of Chapter 12 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.

9.3.1.6. **Assessment of cumulative impact during operation (including maintenance and repair). Superseding 2019 ES, paragraph 12.7.5.9:**

- Where the value of 0.7 km² is used as the maximum parameter for cable protection this should now be read as 0.74 km².

9.3.1.7. Furthermore, during operation, subsequent maintenance or repair activities to the CCF cable would be similar or smaller in scale than the installation activities.

Therefore, it is concluded that the magnitude of any potential cumulative impacts during operation (including maintenance and repair) would be negligible and any effects would not be significant such that the conclusions presented in Section 12.7 of Chapter 12 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.

9.3.1.8. The conclusions stated in Chapter 12 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.

9.3.1.9. The conclusions stated in Section 12.7 of Chapter 9 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in relation to transboundary effects are unchanged and remain valid.

9.4. PROPOSED MITIGATION

9.4.1.1. No potentially significant effects are predicted to result from the CFF development and additional cable crossing and therefore, no additional mitigation is proposed beyond what was already proposed within Chapter 12 of the 2019 ES which is unchanged and remains valid and in paragraph 9.4.1.3 below.

9.4.1.2. However, additional mitigation relating to commercial fisheries has been agreed through consultation with the National Federation of Fishermen's Organisations since the submission of the 2019 ES.

9.4.1.3. **Supplementary to 2019 ES, paragraph 12.8.2.3:**

In addition, preparation of a Fisheries Liaison and Co-existence Plan has been secured through the DML in Schedule 15, Part 2, Condition 4(1)(d)(v) of the DCO. This Plan will ensure that interactions between licensed activities and fishing activities are communicated and will also provide the platform to consult with fisheries interests in regard to cable protection.

9.5. CONCLUSION

Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, it is considered that there would be no change in any residual effects to commercial fisheries receptors and therefore, the conclusions of Chapter 12 in the 2019 ES remain unchanged.

10. SHIPPING, NAVIGATION AND OTHER MARINE USERS

10.1. INTRODUCTION

- 10.1.1.1. Chapter 13 (Shipping, Navigation and Other Marine Users) of the 2019 ES (APP-128) reports the assessment and likely significant effects arising from the Proposed Development on shipping, navigation and other marine users.
- 10.1.1.2. A full review of Chapter 13 (Shipping, Navigation and Other Marine Users) of the 2019 ES (APP-128) has been completed and updates to the impact assessments have only been undertaken and presented where the worst case scenarios and maximum parameters for identified impacts have altered due to the scale and nature of the works required to include the CCF Crossing into the design of the Proposed Development.
- 10.1.1.3. The following sections of Chapter 13 to the 2019 ES remain unchanged and are considered to remain valid:
- study area;
 - legislation, policy and guidance;
 - scoping opinion and consultation;
 - assessment methodology;
 - proposed mitigation; and
 - residual effects.
- 10.1.1.4. The impacts considered to be relevant for re-assessment:
- Construction (and Decommissioning):
 - Increased vessel to vessel collision risk;
 - Disruption to vessel routeing / timetables;
 - Operation (incl. repair and maintenance):
 - Vessel grounding due to reduced under keel clearance.
- 10.1.1.5. The sections below describe the changes and updates to corresponding sections of Chapter 13 of the 2019 ES as a result of the updates to the Proposed Development described in Section 2.3 of this document.

10.2. IMPACT ASSESSMENT

10.2.1.1. The worst case scenario/s for these impacts have been revised to reflect the inclusion of another cable crossing within the marine design of the Proposed Development. Chapter 13 worst case scenarios are based on Chapter 3 (Description of the Proposed Development) and Appendix 3.2 (Marine Worst-Case Design Parameters) with updated information presented in Section 2.3 of this document.

10.2.1.2. **Superseding 2019 ES, paragraph 13.5.3.6;**

Two subsea telecom cables, one operated by Atlantic Crossing, intersects the Marine Cable Corridor at approximately KP 72.5 which connects from the United States of America ('USA') to three European countries, and the CCF Crossing which intersects the UK Marine Cable Corridor at approximately KP 97.5 which connects from the UK to France.

10.2.1.3. The changes compared to the 2019 ES (APP-128) are:

- Additional text to include the CCF Crossing.

10.2.1.4. The further updates to include in Chapter 13 of the 2019 ES (APP-128) are:

- CCF Crossing preparation is expected to take approximately 4 days and the crossing construction is expected to take approximately 8 days.
- As with the Atlantic Cable Crossing, the CCF Crossing rock berm protection could be up to 3 m in height for short lengths (~30 m) where the post-lay berms lie over the top of the pre-lay berm (as illustrated in Figure 3.8, Option 1, APP-153).

10.2.1.5. The embedded mitigation measures described in paragraphs 13.6.1.5 and 13.6.2.2 of Chapter 13 remain unchanged. This includes a Cable Burial and Installation Plan including vessel procedures required for construction works within the Dover Straits Traffic Separation Scheme ('TSS') in consultation with the Maritime and Coastguard Agency ('MCA'), Dover CNIS Channel Navigation Information Service ('CNIS') and Dover Straits TSS Working Group forum. This plan will also cover the construction of the CCF Crossing located at the entrance to the eastbound lane of the TSS.

10.2.2. INCREASED VESSEL TO VESSEL COLLISION RISK

10.2.2.1. **Assessment of impact during construction (and decommissioning). Supplementing 2019 ES, paragraph 13.6.1.8:**

Construction works for the CCF Crossing are expected to take approximately 12 days. This includes a maximum of two vessels (a survey vessel and a rockdump vessel) on site for up to 4 days for construction of the pre-lay bund (berm), and a maximum of two vessels on site for 1-2 days on 6 separate occasions over a period of 5-6 weeks for construction of the post-lay bunds (berms). A guard vessel is expected to be on site throughout the entire construction period for the CCF Crossing.

Due to the location of this cable crossing at the entrance to the eastbound lane of the Dover Strait TSS, the construction works for the CCF Crossing are considered to be a high risk activity for vessel to vessel collision risk.

10.2.2.2. Assessment of impact during construction (and decommissioning). Superseding 2019 ES, paragraph 13.6.1.9:

It is expected that the majority of vessels in the area will be aware of the construction work before encountering project vessels through embedded mitigation (described in paragraph 13.6.1.5). Such mitigation includes circulation of information, AIS broadcast, marking and lighting of construction vessels, requested safe passing distances around construction vessels, the presence of guard vessels and the issue of navigational notices/warnings in order to raise awareness of the construction work to passing vessels. All vessels are also expected to comply with COLREGS and SOLAS. In addition, the Cable Burial and Installation Plan will include a specific methodology for cable installation in the TSS (which is to be agreed in consultation with the MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane, as well as procedures for Langstone Harbour.

10.2.2.3. The changes compared to the 2019 ES (APP-128) are:

- *Inclusion of ‘(which is to be agreed in consultation with the MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane’ in paragraph 13.6.1.9.*

10.2.2.4. No further changes to the assessment presented in the 2019 ES (APP-128) are predicted from the inclusion of the proposed additional CCF Crossing. Accordingly, the conclusions reached in paragraph 13.6.1.10 are unchanged and remain valid.

10.2.3. DISRUPTION TO VESSEL ROUTEING / TIMETABLES

10.2.3.1. Assessment of impact during construction (and decommissioning). Superseding 2019 ES, paragraph 13.6.1.11:

Disruption to vessel routeing/timetables may occur due to the construction works associated with the Proposed Development, including cable installation, Landfall works and construction of the cable crossings. This will significantly affect vessels utilising the Dover Strait TSS as this is an exceptionally busy area of shipping. The risk of a collision between two third-party vessels may also increase as a result of route deviation. Therefore, this impact is likely to affect all passing vessels.

10.2.3.2. The changes compared to the 2019 ES (APP-128) are:

- *Inclusion of ‘and construction of the cable crossings’ in paragraph 13.6.1.11.*

10.2.3.3. Assessment of impact during construction (and decommissioning). Superseding 2019 ES, paragraph 13.6.1.12:

Embedded mitigation (described in paragraph 13.6.1.5) such as circulation of information in advance of construction works will allow routes to be planned with minimal impact on schedules. Temporary aids to navigation (if deemed necessary and under agreement with Trinity House) will aid in routeing vessels around construction activity. Liaison with local ports and harbours will help minimise impacts associated with these areas where sea room is limited. In addition, the Cable Burial and Installation Plan will include a specific methodology for cable installation in the TSS (to be agreed in consultation with MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane, and procedures for Langstone Harbour.

10.2.3.4. The changes compared to the 2019 ES (APP-128) are:

- Inclusion of *'(which is to be agreed in consultation with the MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane'* in paragraph 13.6.1.12.

10.2.3.5. No further changes to the assessment presented in the 2019 ES (APP-128) are predicted from the inclusion of the proposed additional CCF Crossing. Accordingly, the conclusions reached in paragraph 13.6.1.13 are unchanged and remain valid.

10.2.4. VESSEL GROUNDING DUE TO REDUCED UNDER KEEL CLEARANCE

10.2.4.1. **Assessment of impact during operation (including maintenance and repair). Superseding 2019 ES, paragraph 13.6.2.21:**

The worst case type of non-burial protection in terms of reduced under keel clearance, for areas where target burial depth cannot be achieved, is rock placement, which could be between 0.5 m and 1.5 m in height. In line with MCA guidance, it is not planned to reduce the existing water depth by more than 5% along any section of the UK Marine Cable Corridor and deployment of non-burial protection will need to meet the requirement of reduction of not more than 5 % navigable depth in line with the deemed marine licence condition in Schedule 15, Part 2, Condition 4(1)(c) Cable Burial and Installation Plan. Recreational and fishing vessels are the most abundant within the shallow waters; however, some larger dredgers were also recorded intersecting the UK Marine Cable Corridor in this area.

10.2.4.2. The changes compared to Chapter 13 of the 2019 ES (APP-128) are:

- Clarification of non-burial protection heights where target burial depths cannot be achieved and the measures secured to ensure any reduction in navigable depth is not more than 5% water depth.

10.2.4.3. **Assessment of impact during operation (including maintenance and repair). Supplementary to 2019 ES, paragraph 13.6.2.21:**

At the cable crossings, the rock berms could be up to 3 m in height (based on pre-lay berm height of 1.5 m and post-lay berm height of 1.5 m) for short spans. However, the design will fit within the requirement of not more than 5% of navigable depth in line with the deemed marine licence condition in Schedule 15, Part 2, Condition 4(1)(c) Cable Burial and Installation Plan. An assessment of vessel draughts within 2 nmi of the CCF Crossing showed that the maximum draught was 22 m, with 98% of vessels having draughts of less than 16 m. The water depth at this crossing location is c.46 m giving sufficient clearance of 24 m for the largest of vessels in this area. The water depth at the Atlantic Cable Crossing is c.57 m providing suitable under keel clearance for all vessels.

10.2.4.4. No further changes to the assessment presented in the 2019 ES (APP-128) are predicted from the inclusion of the proposed additional CCF Crossing. Accordingly, the conclusions reached in paragraph 13.6.2.23 are unchanged and remain valid.

10.3. NAVIGATION RISK ASSESSMENT

10.3.1.1. Appendix 13.1 (Navigation Risk Assessment) of the 2019 ES (APP-393) reports on the risk assessments undertaken for navigation and shipping.

10.3.1.2. The impacts considered to be relevant for re-assessment are:

- Construction (and Decommissioning):
 - Increased collision risk;
 - Disruption to vessel routing/timetables;
- Operation (incl. repair and maintenance):
 - Vessel grounding due to reduced under keel clearance.

10.3.1.3. A full review of Appendix 13.1 (Navigation Risk Assessment) of the 2019 ES (APP-393) has been completed and updates are provided in the following paragraphs.

10.3.1.4. The further updates to include in Appendix 13.1 of the 2019 ES (APP-393) are:

- CCF Crossing preparation is expected to take approximately 4 days and the crossing construction is expected to take approximately 8 days.
- As with the Atlantic Cable Crossing, the CCF Crossing rock berm protection could be up to 3 m in height for short lengths (~30 m) where the post-lay berms lie over the top of the pre-lay berm (as illustrated in Figure 3.8, Option 1, APP-153).

10.3.1.5. The embedded mitigation measures described in Section 14.4 of Appendix 13.1 remain unchanged. This includes a Cable Burial and Installation Plan including vessel procedures required for construction works within the Dover Straits Traffic Separation Scheme ('TSS') in consultation with the Maritime and Coastguard Agency ('MCA'), Dover CNIS Channel Navigation Information Service ('CNIS') and Dover Straits TSS

Working Group forum. This plan will also cover the construction of the CCF Crossing located at the entrance to the eastbound lane of the TSS.

10.3.1.6. Supplementary to Page 45, Section 7.6:

In addition, a proposed subsea telecommunications cable, called CrossChannel Fibre which connects the UK to France, is planned to intersect the UK Marine Cable Corridor at approximately KP 97.5 and expected to be constructed prior to installation of the UK Marine Cables.

10.3.2. INCREASED COLLISION RISK

10.3.2.1. Assessment of risk during construction (and decommissioning). Supplementary to Page 114, Section 14.5.1, Increased Collision Risk, paragraph 2:

Preparation and construction works for the CCF Crossing are expected to take approximately 12 days. This includes a maximum of two vessels (a survey vessel and a rockdump vessel) on site for up to 4 days for construction of the pre-lay bund, and a maximum of two vessels on site for 1-2 days on 6 separate occasions over a period of 5-6 weeks for construction of the post lay bund. Due to the location of this cable crossing at the entrance to the eastbound lane of the Dover Strait TSS, the construction works for the CCF Crossing are considered to be a high risk activity for vessel to vessel collision risk.

10.3.2.2. Assessment of risk during construction (and decommissioning). Superseding Page 115, Section 14.5.1, Increased Collision Risk, paragraph 6:

All vessels are also expected to comply with COLREGS and SOLAS. In addition, the Cable Burial and Installation Plan secured through the deemed marine licence will include a specific methodology for cable installation in the TSS (to be agreed in consultation with MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane, and procedures for Langstone Harbour.

10.3.2.3. The changes compared to the 2019 ES (APP-393) are:

- Inclusion of '(which is to be agreed in consultation with the MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane' in paragraph 6.

10.3.2.4. No further changes to the assessment presented in the 2019 ES (APP-393) are predicted from the inclusion of the proposed additional CCF Crossing. Accordingly, the conclusions and overall ranking reached on page 115, Section 4.5.1, paragraph 7 in relation to collision risk are unchanged and remain valid.

10.3.3. DISRUPTION TO VESSEL ROUTEING/TIMETABLES

10.3.3.1. **Assessment of risk during construction (and decommissioning). Superseding Page 115, Section 14.5.1, Disruption to Vessel Routeing/Timetables, paragraph 1:**

Disruption to vessel routeing/timetables may occur due to the construction works associated with the Proposed Development, including cable installation, Landfall works and construction of the cable crossings. This will significantly affect vessels utilising the Dover Strait TSS as this is an exceptionally busy area of shipping. The risk of a collision between two third-party vessels may also increase as a result of route deviation. Therefore, this impact is likely to affect all passing vessels.

10.3.3.2. The changes compared to the 2019 ES (APP-393) are:

- Inclusion of ‘as this is an exceptionally busy area of shipping’ and ‘Therefore, this impact is likely to affect all passing vessels’.

10.3.3.3. **Assessment of risk during construction (and decommissioning). Superseding Page 115, Section 14.5.1, Disruption to Vessel Routeing/Timetables, paragraph 2:**

Through circulation of information, the vast majority of vessels should be aware of the cable work in advance, allowing routes to be planned with minimal impact on schedules. Temporary aids to navigation (if deemed necessary) will aid in routeing vessels around installation activity. Liaison with local ports and harbours, in particular Portsmouth and Southampton, will help minimise impacts associated with these areas where sea room is limited. In addition, the Cable Burial and Installation Plan will include a specific methodology for cable installation in the TSS (to be agreed in consultation with MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane, and procedures for Langstone Harbour.

10.3.3.4. The changes compared to the 2019 ES (APP-393) are:

- Inclusion of ‘(which is to be agreed in consultation with the MCA and CNIS), including the construction of the CCF Crossing at the entrance to the eastbound lane’.

10.3.3.5. No further changes to the assessment presented in the 2019 ES (APP-393) are predicted from the inclusion of the proposed additional CCF Crossing. Accordingly, the conclusions and overall ranking reached on page 115, Section 4.5.1, Disruption to Vessel Routeing/Timetables in paragraph 3 are unchanged and remain valid.

10.3.4. VESSEL GROUNDING DUE TO REDUCED UNDER KEEL CLEARANCE

10.3.4.1. **Assessment of risk during operation (including maintenance and repair). Superseding Page 124, Section 14.5.2, Vessel Grounding due to Reduced Under Keel Clearance, paragraph 2:**

- 10.3.4.2. *The worst-case type of non-burial protection in terms of reduced under keel clearance, for areas where target burial depth cannot be achieved, is rock placement, which could be between 0.5 m and 1.5 m in height.*
- 10.3.4.3. The change compared to the 2019 ES (APP-123) is:
- Clarification of non-burial protection heights where target burial depths cannot be achieved.
- 10.3.4.4. **Assessment of impact during operation (including maintenance and repair). Supplementary to Page 124, Section 14.5.2, Vessel Grounding due to Reduced Under Keel Clearance, paragraph 3:**
- 10.3.4.5. *At the cable crossings, the rock berms could be up to 3m in height (based on pre-lay berm height of 1.5 m and post-lay berm height of 1.5 m). However, the design will fit within the requirement of not more than 5% of navigable depth in line with the deemed marine licence condition in Schedule 15, Part 2, Condition 4(1)(c) Cable Burial and Installation Plan. An assessment of vessel draughts within 2 nmi of the CCF Crossing showed that the maximum draught was 22 m, with 98% of vessels having draughts of less than 16 m. The water depth at this crossing location is c.46 m giving sufficient clearance of 24 m for the largest of vessels in this area. The water depth at the Atlantic Cable Crossing is c.57 m providing suitable under keel clearance for all vessels.*
- 10.3.4.6. No further changes to the assessment presented in the 2019 ES (APP-393) are predicted from the inclusion of the proposed additional CCF Crossing. Accordingly, the conclusions and overall ranking reached on page 125, Section 4.5.2, Vessels Grounding due to Reduced Under Keel Clearance in paragraph 5 are unchanged and remain valid.

10.4. CUMULATIVE AND TRANSBOUNDARY EFFECTS

- 10.4.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.
- 10.4.1.2. Cumulative effects that were of principal concern were those resulting from construction activities that contributed to a predicted greater magnitude, duration and extent of impacts, and effects during operation or decommissioning were considered to be the same, or less.
- 10.4.1.3. Limited information is known about the details of the CCF development at the time of writing as their marine licence application has not yet been submitted to the MMO. However, a precautionary approach has been undertaken, and consideration has been given to a potential temporal overlap with the Proposed Development during construction (and decommissioning) works for the CCF development and the other

relevant projects and plans considered within Section 13.7 of Chapter 13 (and Appendix 13.2, APP-394) of the 2019 ES.

- 10.4.1.4. In reviewing the cumulative assessment, it is considered that any potential cumulative impacts during all stages would be mostly limited to areas of spatial overlap where vessels are in close proximity leading to potential collision risk and/or disruption to vessel routing and timetables. During construction, given the small size of the optic fibre cable to be buried, the construction works would be small in scale and as the CCF offshore construction period is predicted to be only c.12 days to cross the whole of the UK Marine Area, then any impacts would be very short in duration and temporary. In addition, vessel operators/contractors are expected to follow best practice guidelines (i.e. issuing of Notice to Mariners, liaison with MCA and Dover CNIS) and in regard to the CCF Crossing specifically, the cable crossing works for the Proposed Development would not commence until the CCF cable has been installed.
- 10.4.1.5. Accordingly, the potential for cumulative effects resulting from the CCF development, the Proposed Development and other relevant projects during all stages are considered to be **tolerable (moderate risk; not significant)** with the embedded and additional mitigation measures already described within Chapter 13 (and Appendix 13.1) of the 2019 ES. Therefore, the conclusions presented in Section 13.7 of Chapter 12 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.
- 10.4.1.6. The conclusions stated in Chapter 13 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.
- 10.4.1.7. The conclusions stated in Section 13.7 of Chapter 13 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in relation to transboundary effects are unchanged and remain valid.

10.5. PROPOSED MITIGATION

- 10.5.1.1. No potentially significant effects are predicted to result from the CCF development and the additional cable crossing and therefore, no additional mitigation is proposed beyond what was already proposed within Chapter 13 and Appendix 13.1 of the 2019 ES which are unchanged and remain valid.

10.6. CONCLUSION

- 10.6.1.1. Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, there would be no change in any residual effects to shipping, navigation or other marine users and therefore, the conclusions of Chapter 13 and Appendix 13.1 in the 2019 ES remain unchanged.

11. MARINE ARCHAEOLOGY

11.1. INTRODUCTION

- 11.1.1.1. Chapter 14 (Marine Archaeology) of the 2019 ES (APP-129) reports the assessment and likely significant effects arising from the Proposed Development on marine archaeology receptors.
- 11.1.1.2. A full review of Chapter 14 (Marine Archaeology) of the 2019 ES (APP-129) has been completed. The worst case scenarios and maximum parameters already assessed for these impacts in Chapter 14 are not altered through the inclusion of the CCF Crossing into the design of the Proposed Development and as such, these impacts have not been re-assessed.
- 11.1.1.3. The following sections of Chapter 14 to the 2019 ES remain unchanged and are considered to remain valid:
- study area;
 - legislation, policy and guidance;
 - scoping opinion and consultation;
 - assessment methodology;
 - baseline environment;
 - impact assessment;
 - proposed mitigation; and
 - residual effects.

11.2. CUMULATIVE AND TRANSBOUNDARY EFFECTS

- 11.2.1.1. Cumulative (intra-project and inter-project) effects have been reconsidered in light of the updates to the Proposed Development and the presence of the CCF development.
- 11.2.1.2. Limited information is known about the details of the CCF development at the time of writing as their marine licence application has not yet been submitted to the MMO. Although current information suggests that it is likely that the CCF development will be operational prior to construction of the Proposed Development, the potential for cumulative effects has been given further consideration should construction of the CCF development occur at the same time as the Proposed Development.
- 11.2.1.3. In this regard, the CCF development falls within the Zone of Influence ('ZOI') for marine archaeology receptors only at the location of the CCF Crossing so there is

potential for spatial overlap with the Proposed Development. However, given the small size of the optic fibre cable to be buried, the construction works would be small in scale and, as the CCF offshore construction period is predicted to be only c.12 days to cross the whole of the UK Marine Area, then any cumulative impacts would be very short in duration and minimal as they would only be limited in spatial extent to the maximum footprint of the cable crossing. Accordingly, any potential cumulative effects will not be significant when considered with the Proposed Development and the other relevant projects and plans considered in Chapter 14 (and Appendix 14.4, APP-398). As such, the conclusions presented in Section 14.7 of Chapter 14 and Chapter 29 (APP-144) of the 2019 ES are unchanged and remain valid.

11.2.1.4. The conclusions stated in Chapter 14 and Sections 29.6 of Chapter 29 (APP-144) and Appendix 29.3 (APP-486) of the 2019 ES in relation to intra-project cumulative effects are unchanged and remain valid.

11.2.1.5. The conclusions stated in Section 14.7 of Chapter 14 and Sections 29.7 and 29.10 of Chapter 29 the 2019 ES in relation to transboundary effects are unchanged and remain valid.

11.3. OUTLINE MARINE WRITTEN SCHEME OF INVESTIGATION

11.3.1.1. No revisions to Appendix 14.3 Outline Marine Written Scheme of Investigation ('WSI') (APP-397) are proposed. In the event of additional mitigation measures arising from the CCF Crossing (for example encountering unexpected archaeological remains), it is expected that marine licence conditions and archaeological best-practice will be secured through the consent for the CCF development (assuming it is constructed prior to the Proposed Development) and would enable appropriate mitigation strategies at the point of the primary seabed, as per industry best-practice (e.g. an Protocol for Archaeological Discoveries and additional measures as appropriate).

11.3.1.2. If the Proposed Development is constructed first, the existing Outline Marine WSI presented in Appendix 14.3 and its further development through the DML (Schedule 15, Part 2, Condition 4(2)) provide adequate mitigation strategies and industry best-practice provisions for known assets and any unexpected discoveries at this location.

11.4. CONCLUSION

11.4.1.1. Having taken into account the CCF development and the additional cable crossing incorporated into the Proposed Development, it is considered that there would be no change in any residual effects to marine archaeology receptors and therefore, the conclusions of Chapter 14 and Appendix 14.3 in the 2019 ES remain unchanged.

12. LANDSCAPE AND VISUAL AMENITY

12.1. INTRODUCTION

- 12.1.1.1. The landscape and visual impact assessment ('LVIA') has been updated to take into consideration the implications of recent findings from an ash dieback survey and assessment of two new additional viewpoints based on requests from the South Downs National Park Authority (SDNPA). The further information set out in this section is also provided to respond to requests contained in the Examining Authority's Further Written Questions (ExQ2): Ex A 2.6.6 and LV2.9.1 (document reference 7.4.3):
- 12.1.1.2. Ex A 2.6.6 – Implications of Ash dieback: “The results of the ash die-back survey [AS-054] in the vicinity of the proposed Converter Station site have implications for the results of the EIA, in terms of a future baseline, LVIA and mitigation requirements.
Could the Applicant please explain how this supplementary information has been, or will be, integrated into the ES?”
- 12.1.1.3. LV2.9.1 Assessment of new viewpoints: “Please could the Applicant provide visualisations of the Proposed Development on the baseline photographs from new VP 1b and new VP 2, together with an assessment of effects, including any breaking of the skyline by the Converter Station building and structures.”

12.2. IMPLICATIONS OF HDD5 LAUNCH COMPOUND OPTION CONFIRMATION

- 12.2.1.1. As a consequence of the confirmed siting of HDD5 compound to the south of Hambledon Road, a minor change has been made to the detailed design guidance which must be implemented within Section 3 of the Onshore Cable Route, as referred to in ES Addendum Appendix 19 Landscape Assessment Assumptions Clarification (REP1-150).
- 12.2.1.2. The previous detailed design guidance in LVIA Appendix 19 read: “Works that run close to the edge of (G661, T302 and T306) (TPO1350G1) and (T300 and H799) (TPO 1350 G6) shall be reviewed at detailed design to minimise impacts through Onshore Cable Micrositing.”
- 12.2.1.3. The revised text should read “Works Compound will be to the south of Hambledon Road and now does not affect the following trees subject to TPOs (G661, T302 and T306) (TPO - 1350 G1) (T290, T303, T307, T392, T318, T312, T313 and T316 (TPO 2290T1, 2290T2, 2290T3, 2290T4, 2290T5 and 2290G1) and (T300 and H799) (TPO - 1350 G6) due to HDD“.

12.3. IMPLICATIONS OF ASH DIEBACK ON THE LVIA

12.3.1.1. In response to concerns raised by the SDNPA, the Applicant recently surveyed the woodlands on which the future baseline relies for visual screening. This comprised the woodlands in the vicinity of the Converter Station Area. A summary of the results of the Ash Dieback Survey Findings – Appendix 3 of document 7.7.17 Request for Changes to the Order limits (AS-054) included in Appendix 3 of this ES Addendum 2 were submitted at Deadline 6 to provide further background on this issue and the need for and benefit of proposed changes to the Order limits.

12.3.2. FUTURE BASELINE

12.3.2.1. The findings of the ash dieback survey indicate that the disease has spread more rapidly than expected since the LVIA (Chapter 15 of the ES (APP-130)) was undertaken.

12.3.2.2. Losses to woodland, as a result of ash dieback, is likely to erode the future baseline considered in the ES as the disease will cause the deterioration and loss of trees that provide a screening function.

12.3.2.3. The ash dieback survey found that the disease is prevalent to varying degrees in all woodlands surrounding the Converter Station, as well as within some hedgerows. It is expected that the majority of ash trees both in the area surveyed, and in the wider landscape, will be badly affected or lost within the next decade.

12.3.3. MITIGATION REQUIREMENTS

12.3.3.1. The Applicant identified a number of mitigation measures which will be put in place to address the loss of trees as a consequence of ash dieback so that the future baseline does not change.

12.3.3.2. Aside from the adoption of active woodland management practices and additional planting as referred to in the 2019 ES, two woodland blocks (Mill Copse and Stoneacre Copse) have since been included in the extended Order limits to help screen the Converter Station. The extension of the Order limits to include these woodlands allows:

- Areas of additional screening planting (suitable non-ash native species) to be planted; and
- Management of the decline of ash trees and replacement planting within the woodland blocks.

12.3.3.3. The Applicant has engaged with the respective landowners (or their agents in respect of Stoneacre Copse) with a view to seeking the necessary rights to plant and manage these two blocks of woodland. However, in order to ensure that these rights are secured and do not pose an impediment to delivery of the Proposed Development, the Applicant proposes to acquire the 'New Landscaping Rights' (as defined in the

Book of Reference) over these plots through the Order powers. Engagement with the landowners will continue with a view to securing acquisition of the necessary rights by agreement if possible.

- 12.3.3.4. The updated Outline Landscape and Biodiversity Strategy ('OLBS') (REP6-038) was revised at Deadline 6 to refer to the ash dieback survey, the consequences of the findings, and includes specific management principles in relation to the new areas of woodland as well as the replacement of trees, including those affected by ash dieback, where required.
- 12.3.3.5. A woodland management plan forming part of the detailed landscaping scheme will be produced for existing woodland, individual and hedgerow trees within the Order limits. Management proposals will include selective felling, replacement with alternative species such as oak with some standing deadwood remaining. Some areas will be allowed to regenerate naturally to increase the density of understorey and encourage further ground flora to establish.
- 12.3.3.6. The woodland management plan will include annual monitoring plans to review yearly actions (including discharging any duties in relation to health and safety) and progress of ash dieback as well as the success of new and replacement planting and of natural regeneration. This will be refined further through the detailed landscaping scheme referred to in Requirement 7 of the draft DCO (REP6-015).
- 12.3.3.7. The indicative landscape management plans for both Option B(i) (REP6-027 and REP6-028) and Option B(ii) (REP6-054) have been updated to reflect the inclusion of both Stoneacre Copse and Mill Copses within the Order limits.
- 12.3.3.8. The woodland management arrangements that the Applicant proposes to put in place would achieve beneficial effects for landscape character through the maintenance of existing woodland blocks that would otherwise be likely to degrade. They would also achieve beneficial effects on ecological resources at both woods, of which Stoneacre Copse is ancient woodland.

12.3.4. IMPLICATIONS OF THE ASH DIEBACK SURVEY FINDINGS

- 12.3.4.1. The assessment of the implications of the ash dieback findings considered:
- The Ash Dieback Survey Findings (Appendix 3 of this ES Addendum 2) carried out by the Applicant on 29 September 2020 in respect of the impact of ash dieback disease on a number of woodlands, hedgerows and linear tree belts surrounding the Proposed Development within and in the immediate vicinity of the Order limits as well as considering the implications of ash dieback in the wider area; and
 - The inclusion of two new woodland blocks Mill Copse and Stoneacre Copse within the Order limits to provide necessary mitigation in connection with the Proposed Development in the light of those findings.

- 12.3.4.2. Whilst ash dieback will affect the wider area, from most long distance viewpoints there is sufficient depth of woodland and enough species variety (in other words, numbers of trees of other species) that the loss of most of the ash is unlikely to affect the findings of the LVIA associated with the Converter Station Area. In addition, ash dieback in the wider area is considered very unlikely to alter the impact of the proposed development on other receptors further afield due to the 'layering' effect of multiple intervening woodland features in filtering and screening views from a greater distance. However, from the closest viewpoints, where there is less depth of existing woodland most affected by ash dieback to provide screening, the change in baseline caused by the loss of ash has the potential to alter the conclusions of the LVIA.
- 12.3.4.3. The assessment therefore focusses principally on visual receptors where it is considered that the loss of ash now expected has the potential to lead to a change in the findings of significance in the assessment. The extent of the review was based on the assessor's knowledge of the site and the receptors, and considered distance from the site, the extent and angle of view they would have towards the Proposed Development and the species composition of the intervening woodland.
- 12.3.4.4. References to 'Receptor No. 17' etc. below are references to the receptors as numbered in Figure 15.47 of the 2019 ES ('Residential Properties and Settlements') (APP-280). The recreational receptors are those referred to in Figure 15.46 of the 2019 ES ('Recreational and Transport Routes – converter station (3km)') (APP-279).
- 12.3.4.5. The following assessment has taken a twofold approach, firstly considering the inclusion of Mill Copse and Stoneacre Copse, and secondly the implications of the assessment if ash dieback was not mitigated as now proposed.

Residential receptors:

Residential properties off Broadway Lane - East – Receptor No 17

- 12.3.4.6. **With mitigation measures:** The view from this receptor (5 properties off Broadway Lane) is oblique to the main view from the properties and the screening is provided by the north end of Stoneacre Copse which is relatively less affected by ash dieback. The magnitude of impact experienced by this receptor would be only marginally different from that predicted in the 2019 ES Chapter and therefore the significance of effect (detailed below) would remain unchanged.
 Construction: Moderate - major (significant)
 Year 0: Moderate - major (significant)
 Year 10: Minor - moderate (significant)
 Year 20: Minor - moderate (not significant)
- 12.3.4.7. **Without mitigation measures:** The view from this receptor would be oblique to the main view from properties. Whilst the screening is reliant on the north end of

Stoneacre Copse (which currently is less affected by the disease), the disease is likely to spread and cause the loss of trees over the next six to eight years. The magnitude of impact experienced by this receptor and taking into consideration the timescale for ash dieback to spread would alter from small to small to medium throughout the operational lifetime of the Converter Station. However existing and new vegetation in the foreground will provide some visual screening function as it matures for some properties whilst for other properties there will be more of a view through Stoneacre Copse. The significance of effect (detailed below) would increase at Year 0 and 10:

Construction: Moderate - major (significant)

Year 0: Moderate - major to Major (significant)

Year 10: Minor-moderate to Moderate-major (significant)⁵

Year 20: Minor-moderate (not significant)

Residential properties off Broadway Lane - East – Receptor No 18

- 12.3.4.8. **With mitigation measures:** Similar to Receptor 17 (Broadway Farm Cottages 1 and 2), the view from this receptor is oblique to the main view and the screening is provided by the north end of Stoneacre Copse which is relatively less affected by ash dieback. The magnitude of impact experienced by this receptor would be marginally greater than that predicted in the 2019 ES Chapter but the significance of effect (detailed below) would remain unchanged.

Construction: Moderate – major (significant)

Operation Year 0: Moderate – major (significant)

Operation Year 10: Moderate – major (significant)

Operation Year 20: Moderate – major (significant)

- 12.3.4.9. **Without mitigation measures:** Similar to receptor 17 the view from this receptor is oblique to the main view from properties. Whilst the screening is reliant on the north end of Stoneacre Copse (which currently is less affected by the disease), the disease is likely to spread and cause the loss of trees over the next six to eight years, The magnitude of impact experienced by this receptor and taking into consideration the timescale for ash dieback to spread would change from medium during construction to medium to large until planting adjacent to the properties becomes established. The significance of effect (detailed below) would increase in year 0.

⁵ The magnitude of change ranges from small to medium. Receptors of properties would have either an oblique filtered or unfiltered view especially in winter. For some receptors, views would be screened by existing vegetation in the foreground unaffected by ash dieback, whilst for others there would be more of a view across to Stoneacre Copse which would be lost until planting regenerates naturally.

Construction: Moderate – major (significant)

Operation Year 0: Moderate – major to Major (significant)

Operation Year 10: Moderate – major (significant)

Operation Year 20: Moderate – major (significant)

Residential properties off Broadway Lane (south east – Receptor Nos 14, 15 and 23)

12.3.4.10. **With mitigation measures:** Whilst the magnitude of impact would increase slightly for the above receptors as a consequence of ash dieback within Stoneacre Copse, the increase would not be sufficient to alter the level of significance of effects identified in the 2019 ES (which are set out below):

Construction: Moderate-major to minor- moderate (significant)⁶

Operation Year 0: Moderate-major (significant)

Operation Year 10: Minor-moderate (not significant)

Operation Year 20: Minor-moderate (not significant)

12.3.4.11. **Without mitigation measures:** The magnitude of impact would increase slightly from medium to medium-large in year 0 as the disease spreads with more of the upper elevations of the Converter Station visible. This change in magnitude would only be in the short-term and until mitigation planting in the foreground becomes established. The significance of effect (detailed below) would increase year 0 only.

Construction: Moderate-major to minor- moderate (significant)

Operation Year 0: Moderate-major to Major (significant)

Operation Year 10: Minor-moderate (not significant)

Operation Year 20: Minor-moderate (not significant)

Recreational receptors:

Users of the Monarch’s Way (DC21/HC06):

12.3.4.12. **With mitigation measures:** Ash dieback would reduce the level of screening from the tree canopy provided by Mill Copse, however partial tree cover in the form of existing unaffected trees and standing dead wood would still provide some screening. It is also likely that lower-level growth within Mill Copse would over time and by year 10 increase in density following the loss of parts of the tree upper canopy. This is based on Mill Copse being actively managed by the Applicant to deal with ash

⁶ Properties forming part of Nos.14, 15 and 23 would have either direct or oblique filtered views of the construction works and associated with the Access Road / Laydown Area / Works Compound in the foreground resulting in a medium to small magnitude of change and therefore a moderate-major to minor-moderate adverse (significant) effect because of proximity.

dieback as proposed in the OLBS. The magnitude of impact would increase short-term and until new planting becomes established with an increase in the extent of visibility, and this would alter the level of significance of effects identified in the 2019 ES but no new significant effects arise (as detailed below).

- 12.3.4.13. The LVIA already considered that views would be most noticeable to the north east of the Converter Station and east of Mill Copse generating a medium magnitude of change on a high sensitivity receptor.

Table 12.1 - Recreational receptors users of the Monarch’s Way– changes to the 2019 ES LVIA

2019 ES LVIA	Change to 2019 ES LVIA
Construction: Moderate-major (significant)	No change
Operation Year 0: Moderate-major (significant)	Year 0: Moderate-major to Major (significant)
Operation Year 10: Moderate (significant)	Year 10: Moderate- major (significant)
Operation Year 20: Minor-moderate (not significant)	No change

- 12.3.4.14. **Without mitigation measures:** Ash dieback is prevalent throughout Mill Copse and the disease is likely to spread. If left unmanaged the visual screening function of the woodland would reduce over the next six to eight years. Whilst some natural regeneration will occur, uncontrolled grazing will also take place creating a “patchwork” of new planting which is unlikely to address the wood’s visual screening function. The magnitude of impact experienced by this receptor and taking into consideration the timescale for ash dieback to spread therefore changes from medium to large in the short to medium term – Year 0 to 10. The significance of effect (detailed below) would therefore increase at Year 0 and declining by year 20 once some understorey planting becomes established providing some screening at eye level:

Construction: Moderate-major (significant)

Operation Year 0: Major (significant)

Operation Year 10: Moderate-major to Major (significant)

Operation Year 20: Minor -moderate (not significant)

Recreational receptors to the south - DC16 / HC04

- 12.3.4.15. **With mitigation measures:** A proportion of the canopy cover forming part of Stoneacre Copse which serves a visual screening function is predicted to be lost due to ash dieback. However, the existing mature native hedgerow to the north of the public right of way and covering approximately half of the public right of way would continue to serve an immediate visual screening function. Whilst users walking along the remaining section of the public right of way would experience a slight change in magnitude, the increase would not be sufficient to alter the nature of effect. By year 10 proposed hedgerow planting would have matured and would be being managed at 3 to 4 m in height. Therefore, there is no predicted change to the levels of significance of effects assessed in the 2019 ES, (which are set out below):
 Construction: Moderate (significant)
 Operation Year 0: Minor (not significant) to moderate (significant)
 Operation Year 10: Minor (not significant)
 Operation Year 20: Negligible (Not significant)

- 12.3.4.16. **Without mitigation measures:** Whilst an existing hedgerow in the foreground would screen some of receptors views across to the Converter Station for part of the route, the extent of ash dieback would become more prevalent through Stoneacre Copse increasing visibility. The magnitude of impact would alter from small to medium to small to large in year 0 and until planting in the foreground and along the northern edge of approximately half of the public right of way becomes established. The significance of effect (detailed below) would increase in year 0 only and apply to the proportion of the public right of the way where views across to the Converter Station would be more open.
 Construction: Moderate (significant)
 Operation Year 0: Minor (not significant) to Moderate-major (significant)
 Operation Year 10: Minor (not significant)
 Operation Year 20: Negligible (Not significant)

Recreational receptors to the south - DC19 / HC28:

- 12.3.4.17. **With mitigation measures:** A proportion of the canopy cover forming part of Stoneacre Copse and which serves a visual screening function for part of the route is expected to be lost as a consequence of ash dieback. From this PRow (DC19/HC28) the magnitude of impact would be greater than that predicted in the 2019 ES until such time as the planting to the south of Stoneacre Copse and hedgerow tree planting edging the southern side of the Access Road has become well established. During construction and at year 0 this increase would not be sufficient to alter the significance of effect, but it would delay the point at which

existing vegetation and the maturing mitigation planting would combine to reduce the effect to non-significant, as was predicted in the 2019 ES. This is reflected in the comparison table below where, due to the effect of ash dieback (even taking into account the Proposed Changes and mitigation measures put forward in the Change Request), the effect at year 10 has increased from Minor to Moderate, to Moderate⁷. However, by year 20 the combination of existing vegetation and mitigation planting would provide screening to the level predicted in the 2019 ES.

Table 12.2 - Recreational receptors to the south - DC19 / HC28 – changes to the 2019 ES LVIA

2019 ES LVIA	Change to 2019 ES LVIA
Construction: Minor (not significant) to moderate (significant)	No change
Operation Year 0: Moderate (significant)	No change
Operation Year 10: Minor (not significant) to Moderate (significant)	Year 10: Moderate (significant)
Operation Year 20: Minor to negligible (not significant)	No change

12.3.4.18. **Without mitigation measures:** The disease is likely to spread and cause the loss of trees over the next six to eight years throughout Stoneacre Copse, reducing the extent of canopy cover serving a visual screening function. The magnitude of impact would alter from medium to medium to large in year 0 and year 10, and until tree planting in the foreground of Stoneacre Copse and within hedgerows adjacent to public right of way becomes established. The significance of effect (detailed below) would increase in year 0 and 10 only.

Construction: Minor (not significant) to moderate (significant)

Operation Year 0: Moderate to Moderate-major (significant)

Operation Year 10: Moderate to Moderate-major (significant)

Operation Year 20: Minor to negligible (not significant)

⁷ Note that this change in the magnitude of effect is not caused by the Proposed Changes, but caused by the ash dieback despite the Proposed Changes which would mitigate the effects of this disease.

Recreational receptors to the south - Denmead Footpath 13 /Bridleway 41 (D13/D41):

12.3.4.19. **With mitigation measures:** Whilst there would be a slight change in the canopy cover of Stoneacre Copse, views across to the Copse are in the middle distance and partially screened by intervening layers of vegetation in the foreground. Whilst there would be a slight change in the magnitude of impact as a consequence of ash dieback it would be insufficient to alter the significance of effects from that predicted in the 2019 ES (which are set out below).

Construction: Negligible

Operation Year 0: Moderate localised (significant)

Operation Year 10: Moderate localised (significant)

Operation Year 20: Minor - moderate localised (not significant)

12.3.4.20. **Without mitigation measures:** Whilst there would be a slight change in the magnitude of impact as a consequence of ash dieback throughout the woodland it would be insufficient to alter the significance of effects from that predicted in the 2019 ES (which are set out below). The significance of effects would remain unchanged based on the screening function of layers of intervening vegetation in the foreground.

Construction: Negligible

Operation Year 0: Moderate localised (significant)

Operation Year 10: Moderate localised (significant)

Operation Year 20: Minor-moderate localised (not significant)

Recreational receptors to the east / south east - Cyclists along Day Lane / Broadway Lane

12.3.4.21. **With mitigation measures:** The main views for users would be around the access entranceway and new gateway link. Whilst there would be a slight change in the canopy cover in middle views across to the converter station given the overall length of route and localised nature of the view this would not be enough to alter the magnitude of impact and therefore the significance of effects from that predicted in the 2019 ES (which are set out below).

Construction: Moderate (significant)

Operation Year 0: Moderate (significant)

Operation Year 10: Minor (not significant)

Operation Year 20: Minor (not significant)

12.3.4.22. **Without mitigation measures:** Whilst there would be a change in the canopy cover in middle distance views this would not be enough to alter the magnitude of impact

and therefore the significance of effects from that predicted in the 2019 ES (which are set out below). The significance of effects would remain unchanged based on the screening function of layers of intervening vegetation in the foreground.

Construction: Moderate (significant)

Operation Year 0: Moderate (significant)

Operation Year 10: Minor (not significant)

Operation Year 20: Minor (not significant)

Transport users - Broadway Lane (east) / Day Lane and Broadway Lane (south) – within immediate vicinity of the access road / north of Lovedean

Substation

12.3.4.23. **With mitigation measures:** The main views for users would either be around the access entranceway and new gateway link, across to the converter station from the north east along Broadway Lane or where the onshore cable route runs south through Section 2 with views across to the converter station. Whilst there will be a slight change in the canopy cover in middle views this would not be enough to alter the magnitude of impact and therefore the significance of effects from that predicted in the 2019 ES (which are set out below).

Construction: Moderate (significant)

Operation Year 0: Moderate (significant)

Operation Year 10: Moderate (significant)

Operation Year 20: Moderate (significant)

12.3.4.24. **Without mitigation measures:** Whilst there would be a change in the canopy cover in middle distance views this would not be enough to alter the magnitude of impact and therefore the significance of effects from that predicted in the 2019 ES (which are set out below). The significance of effects would remain unchanged based on the screening function of layers of intervening vegetation in the foreground.

Construction: Moderate (significant)

Operation Year 0: Moderate (significant)

Operation Year 10: Moderate (significant)

Operation Year 20: Moderate (significant)

12.3.5. CONCLUSION

12.3.5.1. The assessment considered both the inclusion of Mill Copse and Stoneacre Copse on the visual effects of receptors and the implications of the assessment if ash dieback was not mitigated as now proposed.

- 12.3.5.2. In the short term the effectiveness of screening would be reduced as a consequence of ash dieback progression and the resultant loss of leaves from the diseased trees. This will continue until such time as new planting becomes established.
- 12.3.5.3. However, there will be no increase in the level of significance as set out in the 2019 ES for relevant recreational, residential and transport receptors, save for an increase in the significance of the effect experienced by two receptors:
- Recreational users of the Monarch’s Way: Users would experience an increase in adverse significant effects at Year 0 to Year 10 compared to that assessed in the 2019 ES as Mill Copse is managed, new planting is introduced with some natural regeneration. Effects would change from Moderate-major (significant) at Year 0 to Moderate-major to Major (significant), and from Moderate (significant) at Year 10 to Moderate-major (significant). There are no new significant effects. By Year 20 and once planting has established effects would remain unchanged compared to the 2019 ES.
 - Recreational users of the Public Right of Way (footpath DC19 / HC28): Users would suffer a greater significance effect than that assessed in the 2019 ES at Year 10 with the effect changing from Minor (not significant) to Moderate (significant) to Moderate (significant).
- 12.3.5.4. The assessment found that if ash dieback mitigation measures were not implemented the level and extent of significant effects (as detailed above) would be marginally higher for all residential and recreational receptors in close proximity to the Converter Station compared to effects where the ash dieback the mitigation measures are adopted at Year 0 and / or Year 10. By Year 20 and once planting has established, effects would remain unchanged compared to the 2019 ES. This includes users of the Monarch’s Way, PRoW DC16 /HC04 and PRoW DC19 / HC28:
- Residential properties off Broadway Lane – East – Receptor No 17: Receptors would experience an increase in adverse significant effects at Year 0 and Year 10. Effects would change in Year 0 with mitigation measures from Moderate-major (significant), to Moderate-major to Major (significant) without mitigation measures. At Year 10 effects would change from Minor-moderate (significant) with mitigation measures to Minor-moderate to Moderate-major (significant) without mitigation measures.
 - Residential properties off Broadway Lane – East – Receptor No 18: Receptors would experience an increase in adverse significant effects at Year 0. Effects would change in Year 0 with mitigation measures from Moderate-major (significant), to Moderate-major to Major (significant) without mitigation measures.
 - Residential properties off Broadway Lane (south east) – Receptor Nos 14, 15 and 23: Receptors would experience an increase in adverse significant effects at Year

0. Effects would change in Year 0 with mitigation measures from Moderate-major (significant), to Moderate-major to Major (significant) without mitigation measures.

- Recreational users of Monarch's Way: Users would experience an increase in adverse significant effects at Year 0 and Year 10. Effects would change in Year 0 with mitigation measures from Moderate-major to Major (significant), to Major (significant) without mitigation measures. At Year 10 effects would change from Moderate-major (significant), to Moderate-major to Major (significant) without mitigation measures.
- Users of PRoW DC16 /HC04: Users of the public right of way would experience an increase in adverse significant effects at Year 0. Effects would change in Year 0 with mitigation measures from Minor (not significant) to Moderate (significant), to Minor (not significant) to Moderate-major (significant) without mitigation measures.
- Users of PRoW DC19 / HC28: Users of the public right of way would experience an increase in adverse significant effects at Year 0 and Year 10. Effects would change in Year 0 with mitigation measures from Moderate (significant), to Moderate to Moderate-major (significant) at Year 0 and 10 without mitigation measures.

12.3.5.5. Ash dieback will reduce the density of canopy in woodlands in the wider area. However, this is not predicted to alter the impact of the Proposed Development on receptors further afield due to depth of woodland, variety of species other than ash and the 'layering' effect of multiple intervening woodland features in filtering and screening views from a greater distance.

12.3.5.6. In the longer term there will be no changes to the conclusions of the 2019 ES Chapter 15 (APP-130) where these woodland blocks are actively managed as proposed by the Applicant alongside the introduction of new planting and planting around the western and southern edges of Stoneacre Copse as referred to on the updated indicative landscape mitigation plans for Option B(i) and B(ii).

12.3.5.7. The inclusion and management of both areas of woodland will have positive long-term benefits in terms of landscape character allowing improvements to the overall condition and value of these features and in delivering biodiversity benefits. The woodland structure and composition would be restored.

12.3.5.8. Ash lost would either be left as standing dead wood or felled where it is a plant health risk, a safety risk or where the removal would slow the progression of the ash dieback disease. Through selective clearance added benefits will result from natural regeneration as well as selective planting contributing not only to the density of canopy cover but also providing greater screening at eye level through regenerated planting.

12.4. UPDATED INFORMATION: EXAMINING AUTHORITY FURTHER WRITTEN QUESTION (EXQ2) LV2.9.1

12.4.1. OVERVIEW

12.4.1.1. An additional assessment was undertaken of two new viewpoints (viewpoint 1b and viewpoint 2) based on ExQ2 LV2.9.1 which states:

“Please could the Applicant provide visualisations of the Proposed Development on the baseline photographs from new VP 1b and new VP 2, together with an assessment of effects, including any breaking of the skyline by the Converter Station building and structures.”

12.4.1.2. The additional viewpoints were submitted as part of a set of viewpoints by the Applicant at Deadline 6 (refer to Additional Viewpoints Location Plan and Additional Viewpoints – Part A and Part B (REP6-055 and REP6-056 respectively)). They were taken based on South Downs National Park Authority’s response to the ExA’s first written questions LV1.1.9 (REP1-179).

12.4.1.3. The additional assessment itself focused on Viewpoint 1b which was from private land adjacent to the Monarch’s Way and Viewpoint 2 from a PRoW near Prew’s Hanger. Both viewpoints lie within the South Downs National Park. Based on points of clarification raised by the Examining Authority, both viewpoints have been revised subsequent to Deadline 6 and resubmitted at Deadline 7:

- Additional Viewpoint Location Plan and Additional Viewpoints Part A ((REP6-055) Rev 02.

Figures 15.59 A, B and C of Viewpoint 1b have been revised to include the wireline visualisations of Option B(i) and Option B(ii) alongside the baseline panorama (horizontal field of view (HFoV) 90°) on Figure 15.59A. The wireline visualisations have been superimposed on the baseline images for both 15.59 B (HFoV 40°) and 15.59C (HFoV 27°).

- Additional Viewpoint Location Plan and Additional Viewpoints Part B (REP6-055) Rev 02.

12.4.1.4. Figures 15.60 A, B and C of Viewpoint 2 have been revised to include the wireline visualisations of Option B(i) and Option B(ii) alongside the baseline panorama on Figure 15.60A. The wireline visualisations have been superimposed on the baseline images for both 15.60 B (HFoV 40°) and 15.60C (HFoV 27°). The views in these figures have also been realigned slightly to ensure the Proposed Development sits centrally in the view.

12.4.2. ASSESSMENT OF VISUAL EFFECTS

12.4.2.1. The assessment of the visual effects from the two new viewpoints is summarised below. References have been made in the following text to existing and proposed mitigation planting based on the management prescription codes in the updated OLBS, Figure 1 - Outline Landscape and Biodiversity Strategy Management Plan for Option B(i) – Converter Station Area, (REP6-038) Rev003.

New Viewpoint 1b – private land adjacent to the Monarch’s Way

12.4.2.2. The view looks directly across to north western facing slopes of a small valley with a mix of pastoral farmland edged by hedgerows or hedgerows with trees and small pockets of deciduous woodland, including Prew’s Hanger to the east (left of the image). Within the centre of the view are a cluster of properties (including boarding kennels) west of Old Mill Lane which sit close to the ridgeline at approximately 110m AOD. The roofline / upper elevation of Property 5 and 6 (referred to as The Shieling and Old Mill House respectively in Appendix 15.6 Visual Amenity (APP 404)) are discernible behind a line of mature trees at approximately 116 m AOD, and pylon towers running in both a north - south and west - east direction are prominent features interrupting the skyline. There are far distance views across to Port Down with properties discernible on north facing slopes.

12.4.2.3. It should be noted that whilst new viewpoint 1b lies within the South Downs National Park, it is on a farm track on private land to the east of the Monarch’s Way (represented in Figure 15.58A to C) and as such is presented as a worst case from this elevation albeit that this is not from a publicly accessible location and misused by users. The Monarch’s Way runs to the west of this viewpoint as evidenced in viewpoint 1a (Additional Viewpoint Location Plan and Additional Viewpoints Part A (REP6-055) Rev 02).

Construction:

12.4.2.4. A receptor standing in the location of the view would have a direct filtered view of construction activity largely screened by intervening vegetation (woodland trees, hedgerows and hedgerow trees) in the foreground.

12.4.2.5. This view would be experienced by users of the Monarch’s Way who may deviate off the route onto a field track on private land to avoid overgrown vegetation. Whilst the receptor would appreciate the view from private land and not the PRoW, the assessment has attributed a high sensitivity to the receptor. Although no ‘on the ground’ activities would be discernible from this viewpoint, mobile cranes would be noticeable intermittently during part of the construction period (approximately eight months) and the emerging buildings would become visible late in the construction period. Whilst the cranes would break the skyline and be clearly noticeable, they would occupy only a small proportion of the overall view, would not fundamentally alter the character of the view and their presence would be a temporary element in the view during a construction programme of three years. The magnitude of change

experienced would be small to medium, giving rise to a **minor-moderate to moderate-major adverse (significant) effect**.

Operation:

12.4.2.6. At year 0 a receptor standing at the location of the view would perceive a small proportion of the upper northern elevation / roof of the Converter Station. Option B(i) would be more visible than Option B(ii) particularly in winter. As stipulated in the Design Principles, the roof would be a dark recessive colour. The Converter Station would sit below the horizon, and the ridgeline of Port Down would still be apparent in views. The magnitude of change experienced would be small and effects would be **minor-moderate adverse (not significant)**.

12.4.2.7. After 10 years part of the upper northern elevation / roof of the Converter Station would still be noticeable in views behind surrounding existing and mitigation planting north of the Converter Station (PW-5), around the edge of Hillcrest (PW-4) and to the west of the Converter Station in the form of native mixed woodland (PW-7 and PW-8). The magnitude of change and therefore effects would remain unchanged and remain as **minor-moderate adverse (not significant)**.

12.4.2.8. After 20 years some of the mitigation planting would serve a visual screening function and whilst there may be some partial visibility of the upper northern elevation / roof this will be less noticeable as mitigation planting matures resulting in a small to negligible magnitude of change with the resultant effect being **minor-moderate to negligible adverse (not significant)**.

Whilst we have no detailed information on the species composition of the woodland and hedgerow trees, we have assumed that a noticeable proportion of the mature trees in this view would be lost over the next decade due to ash dieback, reducing but not removing the screening effect of vegetation.

New Viewpoint 2 – PRoW near Prew’s Hanger

12.4.2.9. New viewpoint 2 is from a PRoW towards Prew’s Hanger (Horndean 7). It lies within the South Downs National Park and is used by walkers. The view is south facing and one of undulating farmland in the foreground.

12.4.2.10. Beyond the farmland and a partial hedgerow edging the southern side of an unnamed road linking Old Mill Lane and Broadway Lane are belts of mature deciduous trees with Mill Copse and fields of horsiculture crossed by the Monarch’s Way left of centre in the view. Discernible behind vegetation to the west (right in the image) are properties edging Old Mill Lane, namely Properties No 4 The Ranch, No 5 The Shieling and No 6 Old Mill House (described in Appendix 15.6 Visual Amenity (APP-404)) and further west the edge of Prew’s Hanger. A barn off Broadway Lane can be seen behind vegetation to the east (left in the image).

12.4.2.11. Pylon towers and overhead lines running towards Lovedean Substation are prominent features in the view, whilst in the distance Port Down with fortifications is visible on the horizon with headland beyond.

Construction:

12.4.2.12. A user of the PRow would have views varying from direct and partial, to oblique and filtered by intervening vegetation, largely woodland trees and linear belts of trees. The user would experience sequential views along the PRow between Broadway Lane and Prew's Hanger.

12.4.2.13. The visual sensitivity of receptors would be high, whilst the magnitude of change experienced would be small to medium. Whilst occasional ground works at a higher level may be discernible from this viewpoint, the presence of mobile cranes would be the noticeable features during part of the construction period (approximately eight months) along with the emerging Converter Station buildings. Whilst the cranes would be a clearly noticeable feature, breaking the skyline, they would occupy only a small proportion of the view, would not fundamentally alter the character of the view and their presence would be a temporary element in the view during the construction programme of three years. The assessment concludes that the change in visual experience of the route as a whole would be medium and at worst result in a **moderate-major (significant) adverse effect**.

12.4.2.14. Whilst Mill Copse has recorded the presence of ash dieback, the assessment concludes that the woodland serves a partial visual screening function from this PRow and effects would remain unchanged.

Operation:

12.4.2.15. At year 0, the upper northern and western elevations and roof of the Converter Station would be partially visible to users along part of the route. The roof of the Converter Station set at a maximum parameter of 26 m in height (111.1m AOD) would sit below the skyline and the ridgeline of Port Down and be partially concealed by the existing belt of mature trees in the foreground (EH-6 / EH-8). Adhering to the Design Principles, the roof would be a dark recessive colour. Whilst Option B(ii) would be more noticeable in the view compared to Option B(i) particularly in winter, as users move further west views, Option B(ii) would be read in context with the existing Lovedean substation. Overall the magnitude of change on the route would be small, and the effect would be **minor-moderate adverse (significant)**.

12.4.2.16. After 10 years, part of the upper northern and western elevation and roof of the Converter Station would still be visible behind surrounding existing vegetation (including EH-6 and EH-8) and mitigation planting north of the Converter Station (PW-5) and east of the Converter Station forming an extension around existing hedgerows (PW-1, PW-2 and PW-3) in the form of native mixed woodland. The overall magnitude

of change and therefore effects would remain unchanged: **minor-moderate adverse (significant)**.

12.4.2.17. After 20 years some of the mitigation planting would have reached a height to partially screen the building and, whilst there will still be some partial visibility of the upper northern elevation / roof, this will be less noticeable. This would reduce the magnitude of change to small to negligible, with the resultant effect being **minor-moderate to negligible adverse (not significant)**.

12.4.2.18. Ash dieback is prevalent in Mill Copse and the updated OLBS submitted at Deadline 6 has been revised to include the existing woodland (which will fall under a woodland management plan) to provide screening for certain viewpoints. Whilst the presence of Mill Copse contributes slightly to visual screening, views from the PRoW are more reliant on mitigation planting (PW-1, PW-2, PW-3 and PW-5) to serve a screening function. This assessment takes the anticipated ash dieback into account.

12.4.3. CONCLUSION

12.4.3.1. In summary, there would be significant effects experienced by receptors from both viewpoints during construction. In year 0 of operation, receptors appreciating a view from viewpoint 1b would experience a minor-moderate (not significant) effect which would diminish to minor-moderate to negligible adverse by year 20.

12.4.3.2. For viewpoint 2, receptors would experience at year 0 and year 10 a minor-moderate adverse (significant) effect which would reduce to minor-moderate to negligible adverse (not significant) by year 20 and as planting matures.

13. ONSHORE ECOLOGY

13.1. INTRODUCTION

- 13.1.1.1. Denmead Meadows, an area of grassland habitat within fields between Hambledon Road and Anmore Road in Section 3 of the Order limits, has been identified as being an ecological feature of National importance in ES Chapter 16 (Onshore Ecology) (APP-131) (see paragraphs 16.5.1.3 to 16.5.1.5). Options for the HDD5 launch compound included a location within part of Denmead Meadows adjacent to the north-side of Hambledon Road, used as a worst-case option for the assessment of impacts (see Chapter 2, Section 2.2.1.1 to 2.2.1.3), and comprising “Lowland Meadow”, recognised as a Habitat of Principal Importance by legislation and planning policy as described in Section 16.2.1 (APP-131). Lowland meadow is also recognised as a habitat of high distinctiveness requiring bespoke mitigation within the Proposed Development’s Biodiversity Position Paper (REP3-012), and Denmead Meadows Position Paper (REP6-072).
- 13.1.1.2. It is now confirmed that the worst-case option for the HDD5 launch compound, to the north of Hambledon Road, will not be taken forward and the option to the south of Hambledon Road will be utilised. This launch compound, shown in Appendix 4, Figure 1, is located on an area of semi-improved grassland.
- 13.1.1.3. It should be noted that this only affects the launch compound of HDD5. The location of the reception compound, located in the north of Denmead Meadows, and adjacent to Anmore Road, remains unchanged.
- 13.1.1.4. This ES Addendum 2 summarises the relevant implications for ES Chapter 16 (Onshore Ecology) of the 2019 ES (APP-131) and Section 10 of the ES Addendum (REP1-137).

13.2. IMPACT ASSESSMENT

13.2.1. DENMEAD MEADOWS

- 13.2.1.1. The Onshore Cable Corridor runs beneath this site (see Appendix 4, Figure 1), comprising unimproved HPI-quality Lowland Meadow habitat. Embedded mitigation, in the form of HDD, will avoid the need for trenching within Denmead Meadows and thus avoid many of the above-ground related potential effects of the Proposed Development. Confirming the location of the HDD launch compound to south of Hambledon Road avoids effects on HPI-quality Lowland Meadow habitat within the southern-most paddock adjacent to Hambledon Road.

13.2.1.2. By omitting the launch compound option to the north of Hambledon Road, the Lowland Meadow habitat within Denmead Meadows is now avoided (Appendix 4, Figure 1).

13.2.1.3. The magnitude of direct impacts associated with the use of the compound location north of Hambledon Road were **medium**, and assessed as major to moderate and significant. The magnitude of direct impacts associated with the compound location south of Hambledon Road would be **negligible**, with **negligible** effects that are **not significant**.

13.2.2. SEMI-IMPROVED NEUTRAL GRASSLAND

13.2.2.1. The change in the compound location to fields south of Hambledon Road will lead to an increase in the amount of semi-improved neutral grassland temporarily lost to the Proposed Development by 0.3ha to a total of 9.7ha. This will lead to loss of vegetation and alterations to the soil structure, likely lowering botanical diversity. However, semi-improved neutral grassland in this area is used as grazing land and thus subject to disturbance from agricultural sources, an effect lowering its botanical diversity. Direct impacts would therefore be of low magnitude, and with minor effects that are not significant.

13.2.2.2. The assessment of indirect impacts on semi-improved neutral grassland within ES Chapter 16 Onshore Ecology (APP-131), in paragraph 16.6.2.39, remains unchanged.

13.2.3. SPECIES-POOR HEDGEROW WITH TREES

13.2.3.1. There is no change to impacts on species-poor hedgerow with trees. The change in the location of the compound from the north to south of Hambledon Road instead will not change the existing requirement to form an access point within hedgerow surrounding it; thus rather than an access point being in species-poor hedgerow running along the north of Hambledon Road, it will instead be formed in species-poor hedgerow to the south of Hambledon Road. The length of hedgerow cleared to provide the access point will not change.

13.3. PROPOSED MITIGATION

13.3.1.1. Following the confirmation of the launch compound location to the south of Hambledon Road, mitigation previously required to offset direct effects on Lowland Meadow habitat associated with the worst case compound location to the north of Hambledon Road will not be adopted. This comprises:

- Seed harvesting and re-seeding (see Section 16.8.4 of ES Chapter 16 (APP-131) and Section 1.5.3 of Denmead Meadows Position Paper (REP6-072)); and

- Soil horizon management – preservation and storage of turves (APP-131 section 16.8.2, Denmead Meadows Position Paper (REP6-072)).

13.4. RESIDUAL EFFECTS

13.4.1.1. The residual effects have not altered as a result of the updated assessments included within this Chapter and remain negligible.

13.5. CONCLUSION

13.5.1.1. No further significant Onshore Ecology effects have been identified as a result of updated assessment included within this Chapter. It has concluded that mitigation previously required to offset effects on Lowland Meadow habitat is now not required.

14. TRAFFIC AND TRANSPORT

14.1. INTRODUCTION

14.1.1.1. The Applicant has completed the following technical submissions at Deadline 6 and 7 which have altered the assessments contained within Chapter 15 of the ES Addendum (REP1-137):

- Joint Bay Technical Note (REP6-070);
- Day Lane Technical Note (REP6-073);
- Portsmouth City Council Road Safety Note (REP6-071);
- Hampshire County Council Road Safety Note (REP6-075); and
- Supplementary Transport Assessment Addendum (document reference 7.7.20).

14.1.1.2. The above technical submissions are assessed and reported on within the Supplementary Transport Assessment Addendum (document reference 7.7.20).

14.1.1.3. This chapter summarises the changes to the ES Addendum as a result of production/updates to the aforementioned documents.

14.1.1.4. For each of the above submissions, this ES Addendum 2 summarises the relevant content that affects ES Chapter 22 (Traffic and Transport) of the 2019 ES (APP-137) and / or Chapter 15 of the ES Addendum (REP1-137), including a summary of the changes.

14.1.2. JOINT BAY TECHNICAL NOTE

14.1.2.1. The Joint Bay Locations Feasibility Report summarises the Joint Bay (JB) Location Feasibility Assessment conducted for the UK Onshore Cable Route from the Landfall to the Converter Station. JBs will need to be positioned at 600-2000 m intervals along the Onshore Cable Route, corresponding with the lengths of cable that can fit on a drum and pulling tension limits. The lengths of cables between JBs depends on the characteristics of the respective cable route sections; in areas where there are more (or sharper) bends, the length of cable that can be safely pulled is reduced.

14.1.2.2. The 600-2000 m lengths were used to locate suitable sites (e.g. fields / car parks / road verges) adjacent to the proposed cable route, taking into account the characteristics of the route and informed by professional experience regarding the pulling tension for the individual sections of cable. In accordance with paragraph 5.9.1.5 of the Onshore Outline Construction Environmental Management Plan ('CEMP') (REP6-036), JBs to be located off carriageway unless such positioning is unavoidable taking into account environmental and other constraints / considerations

and that this requires no different traffic management measures than are required for cable trenching in that part of the highway.

14.1.2.3.

The Feasibility Report has resulted in amendments to the numbering and some of the indicative JB locations assessed within the STA (REP1-142) and Chapter 15 of the ES Addendum (REP1-137) in relation to the delivery of cable drums during the Construction Stage as detailed below.

Superseding ES Addendum Paragraph 15.5.2.12 and bullet points related to Joint Bays:

- *“In consideration of the delivery routes for cable drums, it should be noted that a preliminary assessment has been completed of the indicative JB locations to confirm if cable drum deliveries will be required to all JBs. This is on the basis that cables do not necessarily need to be pulled from each direction along the Onshore Cable Route. This preliminary assessment has confirmed that delivery of cable drums will be required to only 17 joint bay locations (out of 36 indicative locations identified) along the Onshore Cable Route, as follows:*
 - *Joint Bay 01: within fields south of the Converter Station;*
 - *Joint Bay 04: within fields at Kings Pond Meadows;*
 - *Joint Bay 07: on B2150 Hambledon Road spur road directly south of the B2150 Hambledon Road / Milton Road / Elettra Avenue roundabout;*
 - *Joint Bay 10: A3 London Road south of Mill Road (within bus lane);*
 - *Joint Bay 14: A3 London Road south of Ladybridge roundabout (within bus lane);*
 - *Joint Bay 15: Single Joint Bay within A3 London Road approximately 70m north of Bushy Mead;*
 - *Joint Bay 17: Portsdown Hill Car Park, south of Portsdown Hill Road;*
 - *Joint Bay 18: Single Joint Bay within Farlington Avenue, north of the junction with Burnham Road;*
 - *Joint Bay 19: Single Joint Bay within Farlington Avenue, south of the junction with Moortown Avenue;*
 - *Joint Bay 22: within Zetland Fields adjacent to A2030 Eastern Road;*
 - *Joint Bay 23: within Sainsbury’s car park;*
 - *Joint Bay 24: within Farlington Playing Fields;*
 - *Joint Bay 25: within Kendalls Wharf;*
 - *Joint Bay 29: north of Milton Common, adjacent to A2030 Eastern Road;*

- *Joint Bay 31: Double Joint Bay south western corner of Milton Common, accessed from Moorings Way;*
- *Joint Bay 33: within the University of Portsmouth playing fields, accessed via Locksway Road and Longshore Way;*
- *Joint Bay 35: within Bransbury Park adjacent to the existing Car Park; and*
- *Landfall at Fort Cumberland open space car park (Transition Joint Bay).*
- *The assessment of cable drum delivery routes has therefore been based upon these indicative Joint Bay locations.”*

14.1.3. DAY LANE TECHNICAL NOTE

- 14.1.3.1. Following discussions with Hampshire County Council (HCC) the proposed strategy for the management of HGVs along Day Lane during the construction stage of the Proposed Development has been revised. In addition to provision of the new access junction and haul road, it is proposed that the following methods of vehicle management will be used to mitigate the impacts of construction traffic on Day Lane:
- Introduction of passing bays on Day Lane to provide adequate width for HGVs and general traffic to pass each other;
 - The strategic management of arrivals and departures of HGVs; and
 - Use of traffic marshals and banksman to control traffic on Day Lane and the junction of Day Lane / Lovedean Lane when HGVs are exiting the site.
- 14.1.3.2. The strategic management of arrivals and departures at the Converter Station Area includes the stacking of HGVs exiting the site, the use of Hulbert Road layby east of the A3(M) Junction 3 for arriving HGVs to ‘check-in’ and be escorted to the site and the use of a timed delivery system. The strategy is set out in the Day Lane Technical Note (REP6-073).
- 14.1.3.3. This revised strategy for the management of HGVs requires an update to the Predicted Impacts along Day Lane during the Construction Stage as reported in the ES Addendum.

14.1.4. PORTSMOUTH CITY COUNCIL ROAD SAFETY NOTE

14.1.4.1. In responses to comments made by PCC at a meeting on 11 August 2020 and in their Local Impact Report (REP1-173) the Applicant has completed a Road Safety Technical Note (REP6-071), submitted at Deadline 6, which considered road safety implications of the traffic management measures required to facilitate construction of the Onshore Cable Route and resultant traffic reassignment through further detailed analysis of traffic flow increases across the PCC highway network. In doing so, this note included the following additional assessment to that included within the STA:

- A further assessment of the impact of increased temporary queueing junction which may occur as a result of the proposed works;
- Further assessments of the impact of temporary increased traffic flows on links which are anticipated to experience an increase in traffic flows as a result of vehicles redistributing away from the proposed construction works on the Onshore Cable Corridor; and
- An assessment of the possible road safety implications at traffic management locations on the Onshore Cable Corridor.

14.1.4.2. A summary of this Technical Note is included within Section 3.2 of the STA Addendum and this additional analysis requires an update to the Predicted Impacts on Accidents and Safety as reported in the ES Addendum.

14.1.5. HAMPSHIRE COUNTY COUNCIL ROAD SAFETY NOTE

14.1.5.1. In specific response to HCC's comments in their Deadline 5 submission (REP6-080) the Applicant submitted the HCC Road Safety Technical Note (REP6-075). This Technical Note provided a further assessment of the impact of temporary increased traffic flows on links in the study area, which are anticipated to experience an increase in traffic flows as a result of vehicles redistributing away from the proposed construction works on the Onshore Cable Corridor.

14.1.5.2. A summary of this Technical Note is included within Section 3.3 of the STA Addendum and this additional analysis requires an update to the Predicted Impacts on Accidents and Safety as reported in the ES Addendum.

14.1.6. SUPPLEMENTARY TRANSPORT ASSESSMENT ADDENDUM

14.1.6.1. A Supplementary Transport Assessment (STA) Addendum has been completed which summarises the changes to the Supplementary Transport Assessment (STA) as a result of the aforementioned documents and provides updated assessments where necessary. The following documents are also appended to the STA Addendum to reflect additional assessments completed on the Strategic Road Network:

- Technical Note 'Collision Analysis on Highways England Roads' completed in response to Annex B of Highways England Deadline 4 submission (REP4-043); and
- Additional junction capacity assessments of A3(M) Junction 2 and 3 contained within Technical Note 'HE03 – Response to Highways England Technical Note TN03' completed in response to Annex D of Highways England Deadline 1 submission (REP1-208).

14.1.6.2. All updates included within the STA Addendum are reflected within the assessments included within this Chapter.

14.2. IMPACT ASSESSMENT

14.2.1.1. This section summarises updates to Predicted Impacts as a result of updates to the documents summarised in section 14.1 of this ES Addendum 2. The order in which the Predicted Impacts are included follows Chapter 15 of the ES Addendum (REP1-137).

14.2.2. TRAFFIC DELAY PREDICTED IMPACTS

14.2.2.1. The following updates are required to Traffic Delay predicted impacts to reflect:

- The updated construction traffic management strategy for Day Lane contained within the Day Lane Technical Note; and
- Additional junction capacity assessments of A3(M) Junction 2 and 3 contained within Technical Note 'HE03 – Response to Highways England Technical Note TN03' completed in response to Annex D of Highways England Deadline 1 submission (REP1-208).

Superseding ES Addendum Paragraph 15.5.6.4 and subsequent bullet points related to Traffic Delay Predicted Impacts:

14.2.2.2. The text below supersedes paragraphs 22.6.5.7 and 22.6.5.8 of the submitted 2019 ES (APP-137).

Converter Station / Onshore Cable Corridor

- No junctions within the scope of the assessment for Traffic Delay are included within Section 1.
- Construction of the Converter Station Area access junction may need to be facilitated by shuttle working traffic signals. Taking the assessment of the use of STOP / GO boards at Day Lane / Lovedean Lane junction included within the STA, the average delay per vehicle is anticipated to be approximately 60 seconds in each direction along Lovedean Lane or Day Lane. However, as the Day Lane / Lovedean Lane STOP / GO boards will need to operate on a longer cycle-time than the shuttle working signals in order to allow HGVs to travel from the Converter Station to Lovedean Lane it is anticipated the lower delays will be experienced on Broadway Lane than shown in the assessment completed in the STA This is therefore categorised as a **Low** magnitude of change. Broadway Lane has a **Medium** sensitivity, resulting in a **Minor to Moderate** adverse effect of a temporary and medium-term nature which is considered to be **Not Significant**. Day Lane has a **Low** sensitivity resulting in a **Minor to Moderate** adverse effect on a temporary and short-term basis. These effects are considered to be **Not Significant**.
- Further to this, the Day Lane Technical Note () includes an updated assessment of the proposed STOP / GO boards at the Day Lane / Lovedean Lane junction to reflect the revised proposals that will stop traffic only on Lovedean Lane when HGVs are exiting the site. This assessment has estimates that the average delay time for vehicles on Lovedean Lane as a result of the STOP / GO boards is 5 seconds. This is therefore categorised as a **Negligible** magnitude of change and a **Negligible** adverse effect, which is considered to be **Not Significant**.

14.2.3. ACCIDENTS AND SAFETY PREDICTED IMPACTS

- 14.2.3.1. Additional assessments of accidents and safety included within the following reports require an update the Predicted Impacts included within the ES Addendum:
- Portsmouth City Council Road Safety Note (REP6-071);
 - Hampshire County Council Road Safety Note (REP6-075); and
 - Technical Note 'Collision Analysis on Highways England Roads' appended to the STA Addendum (document reference 7.7.20).
- 14.2.3.2. Within the Portsmouth City Council Road Safety Note (REP6-071) and Hampshire County Council Road Safety Note (REP6-075) the assessment of links has been based upon a quantitative and qualitative approach, using the forecast traffic flows changes between the SRTM Do-Minimum and Do-Something scenarios and the characteristics of each street, (including link sensitivity derived from in Chapter 22 of the ES and ES Addendum) to determine potential safety impacts of increased traffic

flows. The impacts reported can therefore be considered as the environmental effect of the Proposed Development, taking into account the matrix for classifying the significance of effects shown in Table 22.6 of the Chapter 22 of the ES (APP-137).

- 14.2.3.3. These assessments have generated the following locations specific updates, which should be viewed as additional to 13.5.9 of the ES Addendum.

Section 1

- 14.2.3.4. The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Hampshire County Council Road Safety Note:

- Dell Piece West, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**; and
- Hazleton Way, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

Section 3

- 14.2.3.5. The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Hampshire County Council Road Safety Note:

- Anmore Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

Section 4

- 14.2.3.6. The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Hampshire County Council Road Safety Note:

- Closewood Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Elizabeth Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Frenstaple Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Elizabeth Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Mill Road, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.

- Milton Road, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.
- Newlands Lane, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Park Avenue, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.
- Pigeon House Lane, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Pitymoor Lane, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Purbrook Heath Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Sheepwash lane, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Silvester Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Stakes Hill Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Sunnymead Drive, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Westbrook Grove, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.

14.2.3.7. The following accident and safety predicted impacts have been identified as a result of assessment contained within the Portsmouth Council Road Safety Note:

- A3 London Road south of Portsdown Hill Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

Section 5

14.2.3.8. The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Portsmouth City Council Road Safety Note:

- A2030 Havant Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

- Eveleigh Road, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.
- Gilman Road, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.
- Lower Drayton Lane, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Station Road, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.
- Grove Road, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.

Section 7

14.2.3.9.

The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Portsmouth City Council Road Safety Note:

- Anchorage Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Dundas Lane, which will experience a **Moderate adverse effect** on a temporary and short-term basis. This is considered **Significant**.
- Gladys Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Lyndhurst Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Quartremaine Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Stubbington Avenue, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Torrington Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

Section 8

14.2.3.10.

The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Portsmouth City Council Road Safety Note:

- A288 Copnor Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- A3 Northern Parade, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Airport Service Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Aylesbury Road / Queens Road / Paulsgrove Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Burrfields Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Cardiff Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Chichester Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Derby Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Hayling Avenue, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Langley Road / Queens Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- New Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- New Road East, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Powercourt Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Shearer Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- A3 Stamshaw Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- Tangier Road, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

Section 9

14.2.3.11. The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Portsmouth City Council Road Safety Note:

- A2030 Winston Churchill Avenue, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.
- B2151 Victoria Road North, which will experience a **Minor adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

Section 10

14.2.3.12. The following accident and safety predicted impacts have been identified as a result of assessments of the road safety implications of traffic reassignment away from the Onshore Cable Route as contained within the Portsmouth City Council Road Safety Note:

- Kent Road, which will experience a **Minor to Moderate adverse effect** on a temporary and short-term basis. This is considered **Not Significant**.

14.2.3.13. The A3 Mile End Road / Church Street / Hope Street / Commercial Road signalised roundabout was also anticipated to experience an increase in road safety during construction works as a result of queue lengths which were forecast to block back through upstream junctions on Church Street and Commercial Road approaches. This junction is categorised as having a **High** baseline sensitivity with a **Low** magnitude of change. As such the junction experiences a **Moderate adverse effect** in respect to road safety. This effect is temporary and short term in nature. This effect is considered **Significant**.

14.2.4. ABNORMAL LOADS PREDICTED IMPACTS

14.2.4.1. The Abnormal Load predicted impacts has been updated to reflect the Joint Bay Technical Note (REP6-070) and the updated assessments of cable drum deliveries included within the STA Addendum.

Superseding ES Addendum Paragraph 15.5.10.2 bullet 15.5.10.39 related to Abnormal Load Predicted Impacts:

14.2.4.2. The following text of 'Abnormal Load Predicted Impacts' is additional to the 2019 ES (APP-137) and should be located immediately after paragraph 22.6.5.22.

- An assessment of anticipated abnormal load movements related to the delivery of cable drums to the indicative Joint Bay locations is included in section 2.5 of the STA Addendum (document reference 7.7.20). The routing considers both access and egress from each of the indicative Joint Bay locations, noting that in some instances the routes to and from a Joint Bay may be different to reflect achievable turning manoeuvres at each location. In all instances, a swept path analysis exercise has been undertaken, with findings summarised as follows:

Section 1

Joint Bay 01 has been assessed, located within fields south of the Converter Station. The cable drum delivery vehicles will use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 2 onto:

- *B2149 Dell Piece West - A3 Portsmouth Rd / London Road - Lovedean Lane - Day Lane.*

14.2.4.3. The assessment of this route has shown that all manoeuvres could be accommodated within the exiting highway layout, leading to a **Negligible adverse** effect on the public highway on a temporary and short-term basis. This is **Not Significant**.

14.2.4.4. The assessment of AILs related to delivery of Transformers to the Converter Station contained within paragraphs 22.6.5.18 to 22.6.5.22 of the 2019 ES remain valid (or have been downgraded further in terms of degree of impact) and have therefore not been included within this Addendum.

Section 2

14.2.4.5. Joint Bay 04 has been assessed, located within fields at King Pond Meadows. The cable drum delivery vehicles will use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:

- B2150 Hulbert Road and A3 Maurepas Way - B2150 Hambledon Road - Mill Road - Anmore Road.

14.2.4.6. The assessment of this route has shown vehicle overrun of footways occurs on entry / exit to Mill Road from B2150 Hambledon Road, however, this would not impede access. A Temporary Traffic Regulation Order ('TTRO') would be required on Mill Road to temporarily restrict on-street car parking. This has therefore been considered as having a **Minor adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

Section 3

14.2.4.7. Access to Joint Bays located within Section 3 of the Onshore Cable Corridor is not required by cable drum delivery vehicles.

Section 4

- 14.2.4.8. Joint Bay 07 has been assessed, located on the B2150 Hambledon Road spur road immediately south of the B2150 Hambledon Road / Milton Road / Elettra Avenue roundabout. The cable drum delivery vehicles will use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:
- B2150 Hulbert Road and A3 Maurepas Way - A3 London Road – B2150 Hambledon Road.
- 14.2.4.9. Joint Bay 10 has been assessed, located on A3 London Road south of Mill Road. The cable drum delivery vehicles will use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 3 onto:
- B2150 Hulbert Road and A3 Maurepas Way - A3 London Road.
 - Exit from the site would be via the southbound carriageway of the A3 London Road - Ladybridge Road - Stakes Road - Purbrook Way - A3(M) Junction 4.
- 14.2.4.10. The assessment of both of these routes has shown that all manoeuvres could be accommodated within the existing highway layout, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.
- 14.2.4.11. Joint Bay 14 has been assessed, located on A3 London Road south of Ladybridge Roundabout. The cable drum delivery vehicles will use A3 Mile End Road, M275, A27 and A3(M), exiting at Junction 4 onto:
- Purbrook Way - Ladybridge Road - Stakes Road - A3 London Road.
 - Exit from the site would be via the southbound carriageway of the A3 London Road - A3 Southampton Road - M275 / M27.
- 14.2.4.12. The assessment of this route has shown that all manoeuvres could be accommodated within the exiting highway layout, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.
- 14.2.4.13. Joint Bay 15 has been assessed, located on A3 London Road 70 m north of Bushy Mead. The cable drum delivery vehicles will use the same entry and exit route as Joint Bay 14.
- 14.2.4.14. The assessment of both of these routes has shown that all manoeuvres could be accommodated within the existing highway layout, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

- 14.2.4.15. Joint Bay 17 has been assessed, located at Portsdown Hill car park. The cable drum delivery vehicles will use the M275, A27 Havant Bypass and the A3 (M), upon exiting A3 (M) at Junction 4, the construction vehicle will travel westbound along:
- Purbrook Way - Stakes Road - Ladybridge Road - A3 London Road - B2177 Portsdown Hill Road.
 - Exit will be via B2177 Portsdown Hill Road - A3 London Road - A3 Southampton Road – M275 / M27.

- 14.2.4.16. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of the temporary removal of the traffic island and posts at the car park access junction, leading to a **Negligible adverse** effect on the public highway on a temporary and short-term basis. This is **Not Significant**.

Section 5

- 14.2.4.17. Joint Bay 18 has been assessed, located on Farlington Avenue, north of the junction with Burnham Road. The cable drum delivery vehicles will use the M275, A27 Havant Bypass and the A3 (M), upon exiting A3 (M) at Junction 4, the construction vehicle will travel westbound along:
- Purbrook Way - Stakes Road - Ladybridge Road - A3 London Road - B2177 Portsdown Hill Road.
 - Exit will be via Farlington Avenue in the northbound direction, with the cable drum delivery vehicles completing a three point turn using either Burnham Road and Moortown Road under banksman control. From the B2177 Portsdown Hill Road, before travelling onwards southbound on A3 London Road and A3 Southampton Road. Finally, the vehicle would enter M275 and travel southbound towards Portsmouth Cargo Terminal.

- 14.2.4.18. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of the requirement for a temporary road closure on Farlington Avenue and Temporary Traffic Regulation Orders (TTRO) to be implemented to temporarily suspend on-street parking on parts of Farlington Avenue and Burnham road to facilitate entry and exit of the delivery vehicles, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

- 14.2.4.19. Joint Bay 19 has been assessed, located on Farlington Avenue, south of the junction with Moortown Avenue. The cable drum delivery vehicles will use the M275, A27 Havant Bypass and the A3 (M), upon exiting A3 (M) at Junction 4, the construction vehicle will travel westbound along:

- Purbrook Way - Stakes Road - Ladybridge Road - A3 London Road - B2177 Portsdown Hill Road.
- Exit will be via Farlington Avenue in the northbound direction, with the cable drum delivery vehicles completing a three point turn using either Burnham Road and Moortown Road under banksman control. From the B2177 Portsdown Hill Road, before travelling onwards southbound on A3 London Road and A3 Southampton Road. Finally, the vehicle would enter M275 and travel southbound towards Portsmouth Cargo Terminal.

14.2.4.20. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of the requirement for a temporary road closure on Farlington Avenue and Temporary Traffic Regulation Orders (TTRO) to be implemented to temporarily suspend on-street parking on parts of Farlington Avenue and Burnham road to facilitate entry and exit of the delivery vehicles, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

Section 6

14.2.4.21. Joint Bay 22 has been assessed, located within Zetland Fields adjacent to the A2030 Eastern Road. The cable drum delivery vehicles will use A3 Mile End Road, M275 and A27 and existing at the junction with A2030 Eastern Road. Exit from the site would be achieved via the same route with delivery vehicles manoeuvring back onto the A2030 Eastern Road southbound carriageway under control of banksman.

14.2.4.22. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of temporary removal of boundary fencing and creation of a vehicle crossover, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

14.2.4.23. Joint Bay 23 has been assessed, located within Sainsbury's Car Park. The cable drum delivery vehicles will use A3 Mile End Road, M275 and A27 and A2030 Eastern Road as with Joint Bay 11 / 12. Access into Sainsbury's car park would be via the A2030 Eastern Road / Fitzherbert Road traffic signal junction.

14.2.4.24. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the possible exception of temporary removal of traffic signal poles at the A2030 Eastern Road / Fitzherbert Road traffic signal junction, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

Section 7

- 14.2.4.25. Joint Bay 24 located within Farlington Playing Fields has been assessed. The cable drum delivery vehicles will use A3 Mile End Road, M275 and A27 and A2030 Eastern Road as with Joint Bay 11 / 12. Access into Farlington Playing Fields will via the existing access to the public car park under the control of banksman.
- 14.2.4.26. The assessment of this route has shown that some overrun will be required of the inside corner and central island at the entrance to Farlington Playing Fields car park. The earth bank on the inside corner already appears to have been partly flattened through existing vehicle use. The central island is also in a poor state of repair and would be removed to facilitate access and reinstated on completion of construction.
- 14.2.4.27. Further into the Farlington Playing Fields site there are wooden bollards adjacent to the carriageway and a width / height restricting barrier which would need to be removed to facilitate access and then reinstated once works are complete.
- 14.2.4.28. Taking account of these required highway alterations, this has therefore been considered as having a **Minor adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.
- 14.2.4.29. Joint Bay 25 located within Kendalls Wharf, adjacent to the A2030 Eastern Road has been assessed. The cable drum deliveries would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
- Fratton Way - Rodney Road - A2030 Velder Avenue - A2030 Eastern Road – Airport Service Road – Robinson Way -Anchorage Road.
 - Exit would be southbound along the A2030 Eastern Road onto the A27.
- 14.2.4.30. This has been considered as having a **Minor adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.
- Section 8**
- 14.2.4.31. Joint Bay 29 has been assessed, located adjacent to the A2030 Eastern Road north of Milton Common. The cable drum delivery vehicle will use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:
- Fratton Way / Rodney Road - A2030 Velder Avenue - A2030 Eastern Road – Anchorage Road - Robinson Way – Airport Service Road.
 - Exit would then be via A2030 Eastern Road - A2030 Velder Avenue - Fratton Way / Rodney Road - A2030 Goldsmith Avenue - A2030 Victoria Road North, A2030 Winston Churchill Avenue - A3 Anglesea Road - A3 Marketway - A3 Hope Street.
- 14.2.4.32. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of some vehicle

overhang at limited locations (where pedestrians will not be present) along the delivery route, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

14.2.4.33. Joint Bay 31 has been assessed, located on the south-west corner of Milton Common and to be accessed by Moorings Way. The cable drum delivery vehicle would use A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- Fratton Way / Rodney Road: a single-carriageway road which provides access into Fratton industrial estate and subject to a 30mph speed limit;
- A2030 Velder Avenue: a single-carriageway road with one lane northbound and two lanes southbound, subject to a 30mph speed limit; and
- Moorings Way: a single-carriageway residential road, subject to a 20mph speed limit.

14.2.4.34. On Moorings Way, the cable drum delivery vehicles will pull off carriageway and alongside the Joint Bays in order for the cable drums to be offloaded. On exit, cable drum delivery vehicles would be required to complete a three-point turn using Warren Avenue under banksman control.

14.2.4.35. Cable drum delivery vehicles leaving the site would continue southbound along the A2030 Velder Avenue, Fratton Way / Rodney Road, A2030 Goldsmith Avenue, A2030 Victoria Road North, A2030 Winston Churchill Avenue, A3 Anglesea Road, A3 Marketway and A3 Hope Street to reach Portsmouth Cargo Port.

14.2.4.36. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of the requirement for a TTRO to be implemented on parts of Moorings Way to temporarily suspend on street parking along the delivery route, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

Section 9

14.2.4.37. Joint Bay 33 has been assessed, located within University of Portsmouth playing fields and accessed via Locksway Road and Longshore Way. The cable drum delivery vehicle will use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- Fratton Way – Rodney Road – A288 Milton Road – Locksway Road – Longshore Way.
- On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27.

14.2.4.38. The assessment of this route has shown a number of TTROs would be required along Locksway Road to prohibit on-street parking when the cable drum is being delivered. Some vehicle overrun also occurs on entry and exit at the Milton Road / Locksway Road mini-roundabout, which will require the temporary removal of existing bollards at this roundabout to facilitate access. This has therefore been considered as having a **Minor to moderate adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

14.2.4.39. Joint Bay 35 located within Bransbury Park has been assessed. The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- Fratton Way – Rodney Road - A288 Milton Road – Bransbury Road.
- Exit would be via Bransbury Road, A288 Milton Road and A2030 Eastern Road to reach the A27.

14.2.4.40. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

Section 10

14.2.4.41. The Transition Joint Bay at Fort Cumberland open space (Landfall) has been assessed. The cable drum delivery vehicle would use via A3 Commercial Way, A3 Marketway, A3 Anglesea Road, A2030 Winston Churchill Avenue, A2030 Victoria Road North and A2030 Goldsmith Avenue before turning onto:

- A288 Milton Road - Bransbury Road - Henderson Road - Fort Cumberland Road.
- On exit, the cable drum delivery vehicles would head north along Milton Road and A2030 Eastern Road to reach the A27.

14.2.4.42. The assessment of this route has shown that all manoeuvres could be accommodated within the existing highway layout with the exception of temporary removal of the gate and fence to Bransbury Park, leading to a **Negligible adverse effect** on the public highway on a temporary and short-term basis. This is **Not Significant**.

Summary and Conclusions

14.2.4.43. This section has shown that access by cable drum delivery vehicles is achievable in all circumstances, albeit requiring use of either TTROs to restrict on-street parking or temporary removal and reinstatement of street furniture in some locations. Such measures are included for within the dDCO (REP6-015), along with the reinstatement of any alterations after construction is complete to the satisfaction of the relevant highway authority in accordance with the requirements of the New Roads and Street Works Act 1991.

- The assessment of cable drum deliveries to the indicative Joint Bay locations has shown that it is not anticipated there would be any significant effects associated with the cable drum deliveries in connection with the construction of the Proposed Development.

14.3. PROPOSED MITIGATION

14.3.1.1. The revised Predicted Impacts summarised above has not identified the requirement for additional mitigation above that already secured by the Framework Traffic Management Strategy (REP6-030) and Framework Construction Traffic Management Plan (REP6-032).

14.4. RESIDUAL EFFECTS

14.4.1.1. As a result of the updated assessments the following new significant effects have been identified in relation to accidents and safety prior to the consideration of mitigation measures secured by the FTMS (REP6-030) and Framework CTMP (REP6-032). A detailed description of the mitigation strategies secured by the FTMS and Framework CTMP are provided within Section 3 of the STA Addendum with the resultant residual effects summarised in Table 14.1 below.

Table 14.1 - Summary of New Effects Table for Traffic and Transport

Section	Receptor	Effects as detailed in ES Addendum			Updated Effects		
		Significance and Nature of Effects Prior to mitigation	Summary of Mitigation / Enhancement	Significance and Nature of Residual Effects following Mitigation / Enhancement	Significance and Nature of Effects Prior to mitigation	Summary of Mitigation / Enhancement	Significance and Nature of Residual Effects following Mitigation / Enhancement
Section 4	Milton Road	Negligible T/D/ST Not Significant	N/A	Negligible T/D/ST Not Significant	Moderate T/D/ST Significant	Communication Strategy, Framework Signage Strategy to encourage use of appropriate alternative routes and discourage use of inappropriate routes. Secured within FTMS.	Minor to Moderate T/D/ST Not Significant
	Mill Road	(assessed as part of overall assessment of accident and safety)			Moderate T/D/ST Significant	Programme restrictions contained within the FTMS will limit shuttle working traffic signals on A3 London Road and resultant reassignment of traffic during school term to June and half of July only.	Minor to Moderate T/D/ST Not Significant
	Park Avenue				Moderate T/D/ST Significant		
	Westbrook Grove						Communication Strategy and Framework Signage Strategy will encourage use of appropriate alternative routes and discourage

						<p>use of inappropriate routes. Secured within FTMS.</p> <p>Use of traffic marshalling within the vicinity of schools if shuttle working on A3 London Road takes place during school term will mitigate effects of increased traffic flows.</p>	
Section 5	Eveleigh Road	Negligible T/D/ST	N/A	Negligible T/D/ST	Moderate T/D/ST Significant	<p>Programme restrictions contained within the FTMS will prohibit the closure of Farlington Avenue to school holiday period.</p> <p>For works on Havant Road the Communication Strategy, Framework Signage Strategy to encourage use of appropriate alternative routes and discourage use of inappropriate routes. Secured within FTMS.</p> <p>Use of traffic marshalling within the vicinity of schools should work on Havant Road take place during school term.</p>	<p>Minor to Moderate T/D/ST</p> <p>Not Significant</p>
	Gilman Road	Not Significant		Not Significant			
	Station Road	(assessed as part of overall assessment of accident and safety)					
	Grove Road						
Section 7	Dundas Lane	Negligible T/D/ST	N/A	Negligible T/D/ST	Moderate T/D/ST	<p>Programme restrictions contained within the FTMS prohibits construction work from taking</p>	<p>Minor to Moderate T/D/ST</p>

		Not Significant (assessed as part of overall assessment of accident and safety)		Not Significant	Significant	place during school term time except in June and half of July. Communication Strategy and Framework Signage Strategy will encourage use of appropriate alternative routes and discourage use of inappropriate routes. Secured within FTMS. Use of traffic marshalling within the vicinity of Admiral Lord Nelson School should work on Havant Road take place during school term.	Not Significant
Section 10	A3 Mile End Road / Church Street / Hope Street / Commercial Road signalised roundabout	Negligible T/D/ST Not Significant (assessed as part of overall assessment of accident and safety)	N/A	Negligible T/D/ST Not Significant	Moderate T/D/ST Significant	Programme restrictions contained within the FTMS will limit construction works that lead to reassignment to School holidays and June / July only when peak hour traffic flows are lower than other times of year. Traffic signage to be installed to advise drivers not to queue through junction.	Minor to Moderate T/D/ST Not Significant

- 14.4.1.2. Taking into account the summary of mitigation measures included within Table 14.1 there are no significant residual effects on accidents and safety.
- 14.4.1.3. Other residual effect findings have not altered as a result of the updated assessments included within this Chapter, other than the numbering of Joint Bays set-out in Section 14.2.3

14.5. CONCLUSION

- 14.5.1.1. No further significant traffic and transport effects have been identified as a result of updated assessments included within this Chapter.

15. AIR QUALITY

15.1. INTRODUCTION

15.1.1.1. Chapter 23 (Air Quality) of the ES (REP1-033) reports on the assessment and likely significant effects arising from the Proposed Development in relation to local air quality.

15.1.1.2. Additional air quality assessment work has been completed to address the comments of Portsmouth City Council (PCC) in response to item 4H of Issue Specific Hearing 2 (ISH2) of the Examination (14 December 2020). The question raised by the Examiner was:

With reference to the answer to question ExQ1 AQ1.2.4 and the Works Plans, can Portsmouth City Council clarify whether there are particular areas of concern relating to potential exceedances of NO₂ within the Order limits and whether such areas are covered either by Air Quality Management Areas or within the Air Quality Local Plan?

15.1.1.3. In response, PCC requested ‘more information on the impact of the development on the Clean Air Zone (CAZ) and diversion routes in areas of “near exceedance”’ as identified in the PCC 2019 Air Quality Action Plan. A scope of works to provide this information was subsequently agreed between the Applicant and PCC, including:

- CAZ sensitivity modelling; and
- Covid-19 sensitivity studies.

15.1.1.4. This chapter summarises the impact assessment, proposed mitigation, residual effects and conclusion as a result of this new assessment work. A detailed summary of the new assessment work is provided in the following submission made at Deadline 7:

- Appendix 5 Clean Air Zone Sensitivity Testing (document reference 7.8.2.5).

15.2. IMPACT ASSESSMENT

15.2.1. ADDITIONAL ASSESSMENT

15.2.1.1. The scope of works for the CAZ Sensitivity Testing was agreed with PCC, and required that additional detailed quantitative modelling be undertaken using the following parameters:

- Traffic flows from the PCC CAZ modelling used as the Do-Minimum scenario and changes in traffic flows on the links due to the Proposed Development diversions applied (DS1 and DS2 scenarios);

- The Defra Emissions Factor Toolkit (EFT) v10.1 used as agreed between PCC and the Defra Joint Air Quality Modelling Unit;
- Background concentrations from the 2018-base year dataset for 2019 and 2022 used for the assessment, with the associated use of the Defra NO₂ Adjustment for NO_x Sector Removal Tool v8;
- NO_x to NO₂ conversions undertaken using the NO_x to NO₂ Calculator version 8.1; and
- Diffusion tube monitoring data from 2019 as presented in the Annual Status Report for 2020 used to verify the performance of the model.

15.2.1.2. The works also include a narrative on the impact of Covid-19 on local air quality during the Construction Stage. This is supported by the completion of spreadsheet modelling using EFTv10.1 to show the road link specific impact on total emissions of different theoretical traffic scenarios.

15.2.2. RESULTS

15.2.2.1. The results are described in Appendix 5 of this ES Addendum 2 and show imperceptible and small changes in concentrations within the CAZ area as a result of the Proposed Development. It is emphasised that these impacts are temporary with a duration for the construction period and within the working restrictions in the Framework Traffic Management Strategy ('FTMS') (REP6-030) and the works being for temporary periods within those restrictions). Therefore, even though the application of the latest Defra tools and backgrounds to the modelling has removed some of this conservatism, the results remain conservative.

15.2.2.2. On the local road network, the maximum changes predicted within the areas of concern highlighted in the 2019 Air Quality Action Plan are:

- DS1 (southbound road closures on Eastern Road) a deterioration of 0.5 µg/m³ at Church Street against a predicted Do-Minimum concentration of 44.4 µg/m³; and
- DS2 (northbound road closures on Eastern Road) a deterioration of 0.7 µg/m³ at the A2030 Eastern Road Water Bridge against a Do-Minimum concentration of 42.0 µg/m³.

15.2.2.3. On the SRN, the Proposed Development will produce beneficial and adverse impacts which will all be imperceptible. Therefore, there is unlikely to any implication for compliance with EU Directive 2008/50/EC on the SRN if the application is approved.

15.2.2.4. Covid-19 sensitivity testing was undertaken using scenarios previously used by PCC under the guidance of the government's Joint Air Quality Unit (JAQU). The principal scenario where fleet renewal was held at 2021 levels for the 2022 modelled year with the CAZ, showed an expected increase in emissions under both DS scenarios compared to the DM scenario. Changes in traffic were also applied. Whilst in the DS1

scenario it was apparent that a reduction in HGV traffic using the CAZ had a beneficial effect on emissions, under the DS2 scenario this was not the case due to lower initial HGV flows on the links studied. It should be noted however that pollutant emissions and pollutant concentrations are not directly proportionate.

15.3. PROPOSED MITIGATION

15.3.1.1. There are no changes to mitigation already proposed in the FTMS (REP6-031) on the basis of air quality effects identified incorporating the assessment of the CAZ.

15.4. RESIDUAL EFFECTS

15.4.1.1. There are no changes to the residual effects already detailed in ES Chapter 23 (REP1-033).

15.5. CONCLUSION

15.5.1.1. The assessment of the magnitude of impacts incorporating the CAZ is based on conservative assumptions and is predicted to be no more than small. It is therefore, judged that the Proposed Development will not inhibit compliance with EU Directive 2008/50/EC on the local road network and SRN in Portsmouth during the construction phase with an operational CAZ.

15.5.1.2. The impact of the Covid-19 pandemic with the CAZ in place is to delay fleet upgrade and increase emissions without the Proposed Development in place under both Proposed Development scenarios. It is not possible to determine the precise air quality impacts without validation of the effects of Covid-19 on traffic flows and quantitative dispersion modelling; nor is it possible to determine the precise air quality impacts at this time due to the continued changes in government policy regarding movement restrictions on the population and the uncertain, and potentially highly variable, level of public adherence to such measures.

16. WASTE AND MATERIAL RESOURCES

16.1. INTRODUCTION

16.1.1.1. Chapter 27 (Waste and Material Resources) of the 2019 ES (APP-142) reports the assessment and likely significant effects arising from the Proposed Development in relation to waste and material resources.

16.1.1.2. A full review of Chapter 27 (Waste and Material Resources) has been completed and this section of the ES Addendum 2 reports the resulting impact on the assessment of Waste and Material Resources. The updated information relates to an additional marine cable crossing associated with the CCF Crossing, which is located within the Order limits within the UK Marine Area of the Proposed Development, further detail of which is set out in section 2.3. As such, there has been an update to the quantities required for increased rock protection required at the crossing.

16.2. SUPPLEMENTARY INFORMATION

16.2.1. REVISED ROCK MATERIAL QUANTITIES

16.2.1.1. The additional marine cable crossing will require further rock material to be imported during the Construction Stage. Table 16.1 compares the rock quantities reported in Chapter 27 of the 2019 ES, which have been superseded by the quantities associated with the CCF Crossing.

Table 16.1 – Revised Rock Material Quantities

Material type and use	Quantity reported in 2019 ES (tonnes)	Superseded quantities associated with the CCF Crossing (tonnes)
Rock for remedial non-burial protection	725,000	725,000
Rock for cable crossing – post-lay bund	112,000	224,000
Rock for cable crossing – pre-lay bund	9,500	19,000
Rock for HDD exit pit permanent fill	4,900	4,900
Total	851,400	972,900

16.3. UPDATED INFORMATION: MATERIAL QUANTITIES DURING CONSTRUCTION STAGE: MARINE CABLE CORRIDOR

16.3.1.1. The following section provides a comparison of the information reported in the 2019 ES and the superseded information associated with the CCF Crossing. The following tables and paragraphs of Chapter 27 of the 2019 ES are affected by the change in rock quantities:

- Table 27.13 Materials imported to site during the Construction Stage: Marine Cable Corridor;
- Table 27.20 Potential impacts of consuming material resources and disposing of waste during construction of the Proposed Development; and
- Paragraph 27.6.2.10.

16.3.2. REVIEW AND UPDATE OF TABLE 27.13 OF CHAPTER 27

16.3.2.1. Table 27.13 in Chapter 27 of the 2019 ES summarised the anticipated materials required for the construction of the Marine Cable Corridor. The rock quantities and total material quantity have increased associated with the CCF crossing. Table 16.2 below has been updated with the new rock material quantities and supersedes Table 27.13 in Chapter 27 of the 2019 ES.

Table 16.2 - Materials imported to site during the Construction Stage: Marine Cable Corridor

Materials	Quantity (tonnes)	Comments
Cable (fibre optic)	1,050	International sourcing
Cable (power)	21,860	International sourcing
Cable Joints	12	International sourcing
Concrete	10	Regional/national sourcing Clump weights for cable may be a re-useable item (rather than having to be made specifically). Sourcing will be managed by the construction contractor, once commissioned.
Rock	972,900	European sourcing Rock material breakdown: <ul style="list-style-type: none"> • 725,000t of remedial non-burial protection. This may utilise concrete mattresses, grout bags or rock bags;

		<p>the exact form of this material will be determined by the construction contractor, once commissioned.</p> <ul style="list-style-type: none"> • 224,000t cable crossing – post-lay bund. • 19,000t cable crossing – pre-lay bund. This may utilise concrete mattresses, but the exact form of this material will be determined by the construction contractor, once commissioned. • 4,900t HDD exit pit permanent fill.
Rock bags	4,900	European sourcing Used for HDD Exit Pit temporary fill.
Total	1,000,732	Based on current design information it is expected that the majority of these materials will be sourced internationally.

16.3.3. REVIEW AND UPDATE OF TABLE 27.20 OF CHAPTER 27

16.3.3.1. Table 27.20 of Chapter 27 of the 2019 ES provided an overview of the potential impacts during construction stage of the Proposed Development. The increased rock materials quantities associated with the Marine Cable Corridor Construction Stage have increased associated with the CCF crossing. Table 16.3 below (an extract of the construction row for material consumption for the Marine Cable Corridor) has been updated with the new rock material quantities and supersedes this part of Table 27.20 in Chapter 27 of the 2019.

Table 16.3 - Potential impacts of consuming material resources and disposing of waste during construction of the Proposed Development

Project activity	Potential impacts associated with materials resources/waste	Description of the impacts
Construction	<p><u>Material consumption</u></p> <p>Marine Cable Corridor</p> <p>The Marine Construction Stage will require imported materials including rock (or concrete mattress, grout bags, rock bags or similar) for non-burial protection, temporary and permanent fill and cable crossing bund; power cables and FOC, and concrete weights. Provisional estimates indicate that 972,900 tonnes (851,400 tonnes reported in the 2019 ES) of imported rock material, plus 4,900 tonnes of rock bags (both sourced from</p>	Based on the preliminary design information and using professional judgement, the magnitude of impact is anticipated to be moderate as over 50% of the primary materials will be sourced internationally and no mineral safeguarding

Project activity	Potential impacts associated with materials resources/waste	Description of the impacts
	Europe) will be required. Due to the specialist nature of the cables (power and fibre optic) and rock material, the rock material may be sourced from the European mainland. Estimated quantities of imported materials are presented in Table 27.13.	areas will be fully sterilised.

16.3.4. REVIEW AND UPDATE OF PARAGRAPH 27.6.2.10 OF ES CHAPTER 27

Paragraph 27.6.2.10 of Chapter 27 of the 2019 ES summarised the predicted construction stage impacts relevant to materials consumption. The original paragraph and superseded paragraph, due to the amended rock quantities associated with the CCF Crossing are set out below.

Paragraph 27.6.2.10 of the 2019 ES stated:

- Across the Converter Station and Onshore Cable Corridor and Marine Cable Corridor, the estimated material quantities required for the Proposed Development are 1,142,275 tonnes. It is anticipated that 77% will be sourced internationally, and 23% from national, regional or local sources. The marine element of the Proposed Development requires the greatest quantity of materials and these may be sourced predominantly from European (non-UK) markets. This is, in part, due to the requirement for the source rock to be from a material that is suitable for long-term backfill, which is typically sourced from the European mainland.

16.3.4.1. This now states as follows for the superseded rock quantities associated with the CCF Crossing:

- Across the Converter Station and Onshore Cable Corridor and Marine Cable Corridor, the estimated material quantities required for the Proposed Development are 1,263,775 tonnes. It is anticipated that 79% will be sourced internationally, and 21% from national, regional or local sources. The marine element of the Proposed Development requires the greatest quantity of materials and these may be sourced predominantly from European (non-UK) markets. This is, in part, due to the requirement for the source rock to be from a material that is suitable for long-term backfill, which is typically sourced from the European mainland.

16.4. CONCLUSION

16.4.1.1. The amended rock materials required during the Construction Stage are not anticipated to alter the outcomes of the assessment. As reported in Section 27.6

(paragraph 27.6.2.13 ad 27.6.2.14) of Chapter 27 of the 2019 ES, the predicted impacts of material consumption during construction will remain **moderate** as over 50% of the primary material will be sourced internationally, and no mineral safeguarding areas will be sterilised. The significance of effect during construction remains **significant**.

17. CARBON AND CLIMATE CHANGE

17.1. INTRODUCTION

- 17.1.1.1. Chapter 28 (Carbon and Climate Change) of the 2019 ES (APP-143) reports the assessment and likely significant effects arising from the Proposed Development in relation to carbon and climate change.
- 17.1.1.2. A review of Chapter 28 (Carbon and Climate Change) has been completed and this section of the ES Addendum 2 reports the resulting impact on the assessment of Greenhouse Gas (GHG) Emissions as a result of works required to include the CCF Crossing into the design of the Proposed Development.
- 17.1.1.3. The updated information provided in relation to GHG Emissions relates to an additional marine cable crossing associated with the CCF development which is located within the Order limits within the UK Marine Area of the Proposed Development, further detail of which is set out in section 2.3. As such, there has been an update to the bill of quantities to take into account the increased rock protection required at the crossing.

17.2. UPDATED INFORMATION

Chapter 16 (Waste and Material Resources) of this ES Addendum 2 outlines the quantities of additional material to be imported during the Construction Stage for the additional marine cable crossing. Table 17.1 sets out the updated total Construction Stage GHG Emissions, taking into account the updated marine cable corridor rock quantities, against the total construction emission figures reported in the 2019 ES. To demonstrate where the increase in construction emissions has occurred, Table 17.2 shows the marine cable corridor construction emissions for rock reported in the 2019 ES and the updated marine cable corridor rock construction emissions calculated at part of this addendum.

Table 17.1 – Total Construction Emissions

Stage	Embodied Emissions - A1-3 (tCO ₂)	Transport Emissions - A4 (tCO ₂)	Plant Emissions A5 (tCO ₂)	Waste Transport Emissions - A5 (tCO ₂)	Total (tCO ₂)
Total 2019 ES	227,820	16,472	11,757	514	256,563
ES Addendum	237,418	16,989	11,757	514	266,677

Table 17.2 - Marine Cable Corridor Construction Emissions

Stage	Location	Material	Embodied Emissions - A1-3 (tCO ₂)	Transport Emissions - A4 (tCO ₂)
2019 ES	Marine cable corridor	Rock	67,648	3,637
ES Addendum	Marine cable corridor	Rock	77,246	4,153

17.2.1. REVIEW AND UPDATE OF PARAGRAPH 28.6.1.2 OF CHAPTER 28

Paragraph 27.6.2.10 of the 2019 ES states:

Total emissions from the construction of the Proposed Development are estimated to be approximately 257,000 tonnes of CO₂ equivalent (tCO₂e). This estimate shows that embodied emissions (A1-3) would be the biggest single source of construction emissions (89%).

17.2.1.1. Following the updated marine rock quantities, paragraph 28.6.1.2 should now state:

Total emissions from the construction of the Proposed Development are estimated to be approximately 267,000 tonnes of CO₂ equivalent (tCO₂e). This estimate shows that embodied emissions (A1-3) would be the biggest single source of construction emissions (89%).

17.2.2. CONCLUSION

17.2.2.1. In conclusion, following the updates to the Construction Stage Emissions, it has been determined that the overall conclusions made in the original assessment of the 2019 ES remain the same.

17.2.2.2. Significant minor adverse effects are anticipated during construction (and decommissioning) of the Proposed Development due to carbon emissions. Significant beneficial effects are predicted to arise, due to the change in emissions from the generation plant due to energy transfers between UK and France as a result of the operation of the Proposed Development. Following the update to the marine rock quantities, the net CO₂ emissions due to construction and operation of the Proposed Development, over its minimum 40 year lifespan, are expected to be approximately minus 1,262,000 tCO₂e, due to the change in emissions from the generation plant due to energy transfers between UK and France.

18. SUMMARY

18.1. INTRODUCTION

- 18.1.1.1. A summary of the changes made to the 2019 ES and reflected within this Addendum is set out in Table 18.1 below.

Table 18.1 - Summary of changes to the 2019 ES

Document/ Chapter	Summary of changes to the 2019 ES	Reason(s) for Change/ Update	Change to Assessment	Change to Mitigation
6.1 ES Chapters (APP-116 - APP-145)				
Chapter 1: Introduction	No change.	N/A	N/A	N/A
Chapter 2: Consideration of Alternatives	No change.	N/A	N/A	N/A
Chapter 3: Description of the Proposed Development	<p>Supplementary information has been provided in regard to the potential interactions between the Proposed Development and the CCF development.</p> <p>Minor amendments to Chapter 3 and relevant appendices include the changes to the following parameters;</p> <ul style="list-style-type: none"> lengths and proportions of UK Marine Cable Route where target depth of lowering ('TDL') will be achieved; number of vessel movements; increase in maximum footprint of non-burial protection (also Appendix 3.2); increase in worst case construction programme by 2 weeks (also Appendix 3.8); and including an additional cable crossing into the design (also Appendix 3.3). 	To accommodate the CCF development and inclusion of the CCF Crossing.	N/A	N/A
Chapter 4: EIA Methodology	No change.	N/A	N/A	N/A
Chapter 5: Consultation	No change.	N/A	N/A	N/A
Chapter 6: Physical Processes	Superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the maximum footprint of the CCF Cable Crossing (i.e. obstruction of flow and scour). Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 7: Marine Water and Sediment Quality	Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No

Document/ Chapter	Summary of changes to the 2019 ES	Reason(s) for Change/ Update	Change to Assessment	Change to Mitigation
	Minor amendments made to paragraphs 1.7.2.7 and 1.7.2.7 in Appendix 7.1 Marine Water Framework Directive Assessment (APP-372).	To correct error.	No	No
Chapter 8: Intertidal and Benthic Habitats	Superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the maximum footprint of the CCF Cable Crossing (i.e. habitat loss). Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 9: Fish and Shellfish	Superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the maximum footprint of the CCF Cable Crossing (i.e. permanent habitat loss). Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	The ES Addendum and the DCO (REP6-015) now includes provision for a timing restriction for construction works within the herring spawning grounds.
Chapter 10: Marine Mammals and Basking Sharks	Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 11: Marine Ornithology	Superseding information provided regarding the marine design of the Proposed Development. Specifically, in relation to the number of vessel movements and the total area of original habitat loss. Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 12: Commercial Fisheries	Superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the number of vessel movements and the maximum footprint of the CCF Cable Crossing. Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	The ES Addendum and the DCO (REP6-015) now includes provision for a Fisheries Liaison and Co-existence Plan to be produced prior to the commencement of works.
Chapter 13: Shipping, Navigation and Other Marine Users	Supplementary and superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the number of vessel movements, design and location of the CCF Cable Crossing for Chapter 13 and Appendix 13.1 (Navigation Risk Assessment). Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No

Document/ Chapter	Summary of changes to the 2019 ES	Reason(s) for Change/ Update	Change to Assessment	Change to Mitigation
Chapter 14: Marine Archaeology	Further cumulative considerations of the CCF development.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 15: Landscape and Visual Amenity	<p>Updates to future baseline and the implications of the presence of ash dieback in woodland around the Converter Station Area. This was also in relation to Ex A 2.6.6: <i>“The results of the ash die-back survey [AS-054] in the vicinity of the proposed Converter Station site have implications for the results of the EIA, in terms of a future baseline, LVIA and mitigation requirements.</i></p> <p>The ES Addendum 2 identifies two changes in significance of already identified significant effects as a result of an increase in magnitude. It also considers the implications of the assessment on a future baseline if ash dieback was not mitigated as now proposed.</p> <p>The analysis concluded that the two receptors which will suffer a more significant effect than that assessed in the ES are receptors utilising Monarch’s Way at year 0 and year 10, and recreational users of the Public Right of Way DC19 / HC28 to the south of the converter station site, at year 10.</p> <p>In terms of the consequences of the future baseline without mitigation measures the analysis concluded that the level and extent of significant effects would be higher for all residential and recreational receptors in close proximity to the Converter Station at year 0 and / or year 10. This includes residential receptors Nos. 17, 18, 14, 15 and 23, users of the Monarch’s Way, PRow DC16 /HC04 and PRow DC19 / HC28.</p> <p>Could the Applicant please explain how this supplementary information has been, or will be, integrated into the ES?”</p> <p>An additional assessment was also undertaken of two new viewpoints (viewpoint 1b and viewpoint 2) based on ExQ2 LV2.9.1 which states:</p> <p>“Please could the Applicant provide visualisations of the Proposed Development on the baseline photographs from new VP 1b and new VP 2, together with an assessment of effects, including any breaking of the skyline by the Converter Station building and structures.”</p> <p>Visualisations were prepared to support the assessment.</p> <p>The implications of HDD5 Launch Compound Option were reviewed and a minor change made in relation to TPO’d trees which does not affect the assessment.</p>	To address the requests of the Examining Authority to include such information in the ES.	Yes	<p>Yes.</p> <p>A woodland management plan, forming part of the detailed landscaping scheme, will be produced for existing woodland, individual and hedgerow trees within the revised Order limits.</p>
Chapter 16: Onshore Ecology	The worst-case option for the HDD5 launch compound to the north of Hambledon Road has been removed from the design and the southern option taken forward instead. This will result in the avoidance of effects on HPI-quality Lowland Meadow habitat and therefore the removal of related mitigation. The	Due to the removal of the HDD5 launch compound option north of Hambledon Road at Denmead Meadows.	Yes	As a result of the changes to the HDD5 launch compound location mitigation to offset direct

Document/ Chapter	Summary of changes to the 2019 ES	Reason(s) for Change/ Update	Change to Assessment	Change to Mitigation
	selection of the southern option will result in an increase in the amount of semi-improved neutral grassland impacted, although the assessment of indirect impacts on semi-improved neutral grassland remains unchanged.			effects on Lowland Meadow habitat is no longer required in this location.
Chapter 17: Soils and Agricultural Land Use	No change.	N/A	N/A	N/A
Chapter 18: Ground Conditions	No change.	N/A	N/A	N/A
Chapter 19: Groundwater	No change.	N/A	N/A	N/A
Chapter 20: Surface Water Resources and Flood Risk	No change.	N/A	N/A	N/A
Chapter 21: Heritage and Archaeology	No change.	N/A	N/A	N/A
Chapter 22: Traffic and Transport	<p>The Applicant has completed the following technical submissions at Deadline 6 and 7 which have altered the assessments contained within Chapter 15 of the ES Addendum (REP1-137):</p> <ul style="list-style-type: none"> • Joint Bay Technical Note (REP6-070); • Day Lane Technical Note (REP6-073); • Portsmouth City Council Road Safety Note (REP6-071); • Hampshire County Council Road Safety Note (REP6-075); and • Supplementary Transport Assessment Addendum (document reference 7.7.20). <p>For each of the above submissions, this ES Addendum 2 summarises the relevant content that affects ES Chapter 22 (Traffic and Transport) of the 2019 ES (APP-137) and / or ES Addendum (REP1-137), including a summary of the changes, which include numbering of Joint Bays, traffic delay impacts and abnormal load impacts. No additional significant traffic and transport effects are identified as a result of updated assessments.</p>	<p>To align the traffic and transport assessment with the following documents:</p> <ul style="list-style-type: none"> • Joint Bay Technical Note (REP6-070); • Day Lane Technical Note (REP6-073); • Portsmouth City Council Road Safety Note (REP6-071); • Hampshire County Council Road Safety Technical Note (REP6-075); and • Supplementary Transport Assessment Addendum 	No	No

Document/ Chapter	Summary of changes to the 2019 ES	Reason(s) for Change/ Update	Change to Assessment	Change to Mitigation
		(document reference 7.7.20).		
Chapter 23: Air Quality	Inclusion of Clean Air Zone Sensitivity Testing in Portsmouth.	To address concerns raised by Portsmouth City Council in response to item 4H of Issue Specific Hearing 2 (ISH2) of the Examination (14 December 2020).	No	No
Chapter 24: Noise and Vibration	No change.	N/A	N/A	N/A
Chapter 25: Socio-economics	No change.	N/A	N/A	N/A
Chapter 26: Human Health	No change.	N/A	N/A	N/A
Chapter 27: Waste and Material Resources	Superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the increases in materials volumes due to the CCF Cable Crossing.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 28: Carbon and Climate Change	Superseding information provided regarding the maximum parameters of the marine design of the Proposed Development. Specifically, in relation to the increases in materials volumes due to the CCF Cable Crossing.	To accommodate the CCF development and inclusion of the CCF Crossing.	No	No
Chapter 29: Cumulative Effects	No change.	N/A	N/A	N/A
Chapter 30: Summary and Conclusions	Updates summarised within this table.			
Non-Technical Summary	<ul style="list-style-type: none"> Includes reference to ES Addendum 2; Supplementary summary information added in regard to Habitats Regulation Assessment in Sections 8 to 10; Additional mitigation included in Sections 9 and 12; Additional future baseline information and mitigation included in Section 15; Amendments to potential impacts and mitigation in Section 16; and Amendments to mitigation included in Section 22; and Amendments to residual effects in Section 28. 			

REFERENCES

Blackwell, S.B. (2005). Underwater measurements of pile-driving sounds during the Port MacKenzie dock modifications, 13-16 August 2004. Rep. from Greeneridge Sciences, Inc., Goleta, CA, and LGL Alaska Research Associates, Inc., Anchorage, AK, in association with HDR Alaska, Inc., Anchorage, AK, for Knik Arm Bridge and Toll Authority, Anchorage, AK, Department of Transportation and Public Facilities, Anchorage, AK, and Federal Highway Administration, Juneau, AK. 33 p.

Burgess, W.C., Blackwell, S.B. and Abbott, R. (2005). Underwater acoustic measurements of vibratory pile driving at the pipeline 5 crossing in the Snohomish river, Everett, Washington. URS Project No. 33756899.

Graham, I.M., Pirota, E., Merchant, N.D., Farcas, A., Barton, T.R., Cheney, B., Hastie, G.D. and Thompson, P.M. (2017). Responses of bottlenose dolphins and harbor porpoises to impact and vibration piling noise during harbor construction. *Ecosphere* 8(5):e01793. 10.1002/ecs2.1793.

Hammond, P.S., Lacey, C., Gilles, A., Viquerat, S., Börjesson, P., Herr, H., Macleod, K., Ridoux, V., Santos, M.B., Scheidat, M., Teilmann, J., Vingada, J. and Øien, N. (2017). Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys.

NMFS. (2020). Manual for Optional User Spreadsheet Tool (Version 2.1) for: 2018 Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. Silver Spring, Maryland: Office of Protected Resources, National Marine Fisheries Service.

NOAA. (2018). 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 p.

Russell, D.J.F., Jones, E.L. and Morris, C.D. (2017). Updated seal usage maps: The estimated at-sea distribution of grey and harbour seals. *Scottish Marine and Freshwater Science* 8(25): 25pp.

Watson & Hillhouse. (2019). ICE EMV Technical Data Sheet provided by the HDD design team for the Proposed Development.

