# **Planning Inspectorate**

**Advice Note 10** 

**Habitats Regulations Assessment Report** 

**Appendix 1: European Sites Screening and Integrity Matrices** 

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# **Screening Matrices - Potential Effects**

Potential effects upon the European site(s)\* which are considered within the submitted Habitat Regulations Assessment ('HRA') Report (APP-491, Rev 006) are provided in the table below. Effects have been grouped where appropriate for ease of presentation. Ramsar screening and integrity matrices are presented in Appendix 5 (document reference 7.7.10).

## Effects considered within the screening matrices for marine ornithology features

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information #	Presented in screening matrices as
UK sites identified:	Alone:	Alone:
	Disturbance & displacement	Disturbance & displacement
Solent and Dorset Coast SPA	Indirect effects	Indirect effects
Chichester and Langstone Harbours SPA	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
Portsmouth Harbour SPA	• INIS	• INIS
Solent and Southampton Water SPA	Accidental spills	Accidental spills
Pagham Harbour SPA	• Litter	• Litter
	In combination:	In combination:
	Disturbance & displacement	Disturbance & displacement
	Indirect effects	Indirect effects
	Collision	Collision
	• INIS	• INIS
	Accidental spills	Accidental spills
	• Litter	• Litter
Transboundary sites identified:	Alone:	Alone:
	Disturbance & displacement	Disturbance & displacement
Littoral Seino-Marin SPA	Indirect effects	Indirect effects
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	• INIS	• INIS
	Accidental spills	Accidental spills
	• Litter	• Litter
	In combination:	In combination:
	Disturbance & displacement	Disturbance & displacement
	Indirect effects	<ul> <li>Indirect effects</li> </ul>
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	• INIS	• INIS
	Accidental spills	Accidental spills
	• Litter	• Litter
Pre-screened out sites:	Alone:	Alone:
	Disturbance & displacement	<ul> <li>Disturbance &amp; displacement</li> </ul>
Poole Harbour SPA	Indirect effects	<ul> <li>Indirect effects</li> </ul>
Dungeness, Romney Marsh and Rye Bay SPA	Collision	<ul> <li>Collision</li> </ul>

<sup>\*</sup> As defined in Advice Note 10.

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Designation	Effects described in submission information #	Presented in screening matrices as
Estuaire et Marais de la Basse Seine SPA	• INIS	• INIS
	Accidental spills	<ul> <li>Accidental spills</li> </ul>
	• Litter	• Litter
	In combination:	In combination:
	Disturbance & displacement	Disturbance & displacement
	Indirect effects	Indirect effects
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	• INIS	• INIS
	Accidental spills	Accidental spills
	• Litter	• Litter

# Effects considered within the screening matrices for fish features

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information #	Presented in screening matrices as
UK sites		
River Itchen SAC	Alone:	Alone:
River Avon SAC	<ul> <li>Increased SSC</li> </ul>	Increased SSC
River Axe SAC	Physical Injury	Physical Injury
Plymouth Sound and Estuaries SAC	Invasive species	Invasive species
	<ul> <li>Pollution events</li> </ul>	Pollution events
	<ul> <li>Noise and vibration</li> </ul>	Noise and vibration
	Visual disturbance	Visual disturbance
	EMF (Operation)	• EMF
	<ul> <li>Temperature changes (Operation)</li> </ul>	Temperature changes
	In combination:	In combination:
	<ul> <li>Increased SSC</li> </ul>	<ul> <li>Increased SSC</li> </ul>
	<ul> <li>Noise and Vibration</li> </ul>	<ul> <li>Noise and Vibration</li> </ul>
Transboundary (French) sites		
Littoral Cauchois SAC	Alone:	Alone:
	<ul> <li>Increased SSC</li> </ul>	Increased SSC
	Physical Injury	Physical Injury
	Invasive species	Invasive species
	Pollution events	Pollution events
	<ul> <li>Noise and vibration</li> </ul>	Noise and vibration
	Visual disturbance	Visual disturbance
	EMF (Operation)	• EMF
	Temperature changes (Operation)	Temperature changes

Designation	Effects described in submission information #	Presented in screening matrices as
	In combination:	In combination:
	Increased SSC	Increased SSC
	Noise and Vibration	Noise and Vibration
Estuaires et Littoral Picards (Baies de Somme et	Alone:	Alone:
d'Authie) SAC	Increased SSC	Increased SSC
	Physical Injury	Physical Injury
	Invasive species	Invasive species
	Pollution events	Pollution events
	Noise and vibration	Noise and vibration
	Visual disturbance	Visual disturbance
	EMF (Operation)	• EMF
	Temperature changes (Operation)	Temperature changes
	In combination:	In combination:
	Increased SSC	Increased SSC
	Noise and Vibration	Noise and Vibration
Baie de Canche et Couloir des Trois Estuaires	Alone:	Alone:
SAC	Increased SSC	Increased SSC
	Physical Injury	Physical Injury
	Invasive species	Invasive species
	Pollution events	Pollution events
	Noise and vibration	Noise and vibration
	Visual disturbance	Visual disturbance
	EMF (Operation)	• EMF
	Temperature changes (Operation)	Temperature changes
	In combination:	In combination:
	Increased SSC	Increased SSC
	Noise and Vibration	Noise and Vibration
Baie de Seine Orientale SAC	Alone:	Alone:
	Increased SSC	Increased SSC
	Physical Injury	Physical Injury
	Invasive species	Invasive species
	Pollution events	Pollution events
	Noise and vibration	Noise and vibration
	Visual disturbance	Visual disturbance
	EMF (Operation)	• EMF
	Temperature changes (Operation)	Temperature changes
	In combination:	In combination:
	Increased SSC	Increased SSC
	Noise and Vibration	Noise and Vibration
Estuaire de la Seine SAC	Alone:	Alone:
	Increased SSC	Increased SSC

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Designation	Effects described in submission information #	Presented in screening matrices as
	Physical Injury	Physical Injury
	<ul> <li>Invasive species</li> </ul>	Invasive species
	<ul> <li>Pollution events</li> </ul>	Pollution events
	<ul> <li>Noise and vibration</li> </ul>	Noise and vibration
	<ul> <li>Visual disturbance</li> </ul>	Visual disturbance
	<ul> <li>EMF (Operation)</li> </ul>	• EMF
	<ul> <li>Temperature changes (Operation)</li> </ul>	Temperature changes
	In combination:	In combination:
	<ul> <li>Increased SSC</li> </ul>	Increased SSC
	<ul> <li>Noise and Vibration</li> </ul>	<ul> <li>Noise and Vibration</li> </ul>

## Effects considered within the screening matrices for marine mammal features

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated. All of the effects listed were assessed for both the Proposed Development alone and for the Proposed Development in combination with other plans/projects.

Designation	Effects described in submission information <sup>#</sup>	Presented in screening matrices as
Transboundary sites		
Récifs Gris-Nez Blanc-Nez SAC	Auditory injury	Auditory injury
	• Disturbance	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	• Pollution	• Pollution
Ridens et dunes hydrauliques du détroit du Pas-de-	Auditory injury	Auditory injury
Calais SAC	<ul> <li>Disturbance</li> </ul>	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	• Pollution	• Pollution
Baie de Canche et couloir des trois estuaires SAC	Auditory injury	Auditory injury
	<ul> <li>Disturbance</li> </ul>	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
Estuaires et littoral picards (baies de Somme et	Auditory injury	Auditory injury
d'Authie) SAC	Disturbance	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	• Pollution	• Pollution
Littoral Cauchois SAC	Auditory injury	Auditory injury
	Disturbance	Disturbance

Designation	Effects described in submission information <sup>#</sup>	Presented in screening matrices as
	Collision	Collision
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	• Pollution
Baie de Seine Orientale SAC	Auditory injury	Auditory injury
	<ul> <li>Disturbance</li> </ul>	<ul> <li>Disturbance</li> </ul>
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
Estuaire de la Seine SAC	Auditory injury	Auditory injury
	Disturbance	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	• Pollution
Pre-screened out sites		
Southern North Sea SAC	Auditory injury	Auditory injury
	<ul> <li>Disturbance</li> </ul>	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	• Pollution
The Wash and North Norfolk Coast SAC	<ul> <li>Auditory injury</li> </ul>	Auditory injury
	<ul> <li>Disturbance</li> </ul>	<ul> <li>Disturbance</li> </ul>
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	<ul> <li>Indirect effects</li> </ul>	Indirect effects
	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
Pembrokeshire Marine SAC	<ul> <li>Auditory injury</li> </ul>	Auditory injury
	<ul> <li>Disturbance</li> </ul>	<ul> <li>Disturbance</li> </ul>
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
Cardigan Bay SAC	Auditory injury	Auditory injury
	<ul> <li>Disturbance</li> </ul>	Disturbance
	<ul> <li>Collision</li> </ul>	<ul> <li>Collision</li> </ul>
	Indirect effects	Indirect effects
	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>

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# Effects considered within the screening matrices for Annex I habitat features

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information <sup>#</sup>	Presented in screening matrices as
Solent Maritime SAC	Habitat disturbance	Habitat disturbance/loss
	Habitat loss	
	Deposition of sediment (smothering)	Increased SSC/smothering
	• Increased SSC	
	Resuspension of contaminated sediments	Contaminated sediments
	Hydrodynamic changes	Hydrodynamic changes
	Invasive species	Invasive species
	Pollution events	Pollution (incl. light/noise)
	Increased light pollution	
	Noise and vibration	
	Temperature changes	EMF/temperature
	• EMF	
South Wight Maritime SAC	Habitat disturbance	Habitat disturbance/loss
<b>5</b>	Habitat loss	
	Deposition of sediment (smothering)	Increased SSC/smothering
	• Increased SSC	ereasea ee e, eeag
	Resuspension of contaminated sediments	Contaminated sediments
	Hydrodynamic changes	Hydrodynamic changes
	Invasive species	Invasive species
	Pollution events	Pollution (incl. light/noise)
	Increased light pollution	
	Noise and vibration	
	Temperature changes	<ul> <li>EMF/temperature</li> </ul>
	• EMF	
Pre-screened out sites		
Solent and Isle of Wight Lagoons SAC	Habitat disturbance	Habitat disturbance/loss
Solent and Isle of Wight Lagoons CAO	Habitat loss	Trabitat disturbance/1035
	Deposition of sediment (smothering)	Increased SSC/smothering
	Increased SSC	Increased 330/smothering
	Resuspension of contaminated sediments	Contaminated sediments
	·	
	Hydrodynamic changes     Invasive species	Hydrodynamic changes     Invasive species
	Invasive species     Pollution events	Invasive species     Pollution (incl. light/poins)
	Pollution events     Ingregood light pollution	Pollution (incl. light/noise)
	Increased light pollution	
	Noise and vibration     Tomporature shapes	
	Temperature changes	● EMF/temperature
	● EMF	

Designation	Effects described in submission information#	Presented in screening matrices as
Wight-Barfleur Reef SAC	Habitat disturbance	Habitat disturbance/loss
	Habitat loss	
	Deposition of sediment (smothering)	<ul> <li>Increased SSC/smothering</li> </ul>
	Increased SSC	
	Resuspension of contaminated sediments	<ul> <li>Contaminated sediments</li> </ul>
	Hydrodynamic changes	<ul> <li>Hydrodynamic changes</li> </ul>
	Invasive species	Invasive species
	Pollution events	<ul> <li>Pollution (incl. light/noise)</li> </ul>
	Increased light pollution	· · · · · · · · · · · · · · · · · · ·
	Noise and vibration	
	Temperature changes	<ul> <li>EMF/temperature</li> </ul>
	• EMF	·
Bassurelle Sandbank SAC	Habitat disturbance	<ul> <li>Habitat disturbance/loss</li> </ul>
	Habitat loss	
	Deposition of sediment (smothering)	<ul> <li>Increased SSC/smothering</li> </ul>
	Increased SSC	
	Resuspension of contaminated sediments	Contaminated sediments
	Hydrodynamic changes	Hydrodynamic changes
	Invasive species	Invasive species
	Pollution events	<ul> <li>Pollution (incl. light/noise)</li> </ul>
	Increased light pollution	,
	Noise and vibration	
	Temperature changes	<ul> <li>EMF/temperature</li> </ul>
	• EMF	·
Ridens et dunes hydrauliques du	Habitat disturbance	<ul> <li>Habitat disturbance/loss</li> </ul>
létroit du Pas-de-Calais SAC	Habitat loss	
	Deposition of sediment (smothering)	Increased SSC/smothering
	Increased SSC	<u> </u>
	Resuspension of contaminated sediments	Contaminated sediments
	Hydrodynamic changes	Hydrodynamic changes
	Invasive species	Invasive species
	Pollution events	Pollution (incl. light/noise)
	Increased light pollution	,
	Noise and vibration	
	Temperature changes	<ul> <li>EMF/temperature</li> </ul>
	• EMF	
Studland to Portland SAC	Habitat disturbance	<ul> <li>Habitat disturbance/loss</li> </ul>
	Habitat loss	
	Deposition of sediment (smothering)	<ul> <li>Increased SSC/smothering</li> </ul>
	Increased SSC	

Designation	Effects described in submission information <sup>#</sup>	Presented in screening matrices as
	Resuspension of contaminated sediments	Contaminated sediments
	Hydrodynamic changes	<ul> <li>Hydrodynamic changes</li> </ul>
	Invasive species	<ul> <li>Invasive species</li> </ul>
	Pollution events	<ul> <li>Pollution (incl. light/noise)</li> </ul>
	Increased light pollution	
	Noise and vibration	
	Temperature changes	<ul> <li>EMF/temperature</li> </ul>
	● EMF	
ittoral Cauchois SAC	Habitat disturbance	<ul> <li>Habitat disturbance/loss</li> </ul>
	Habitat loss	
	Deposition of sediment (smothering)	<ul> <li>Increased SSC/smothering</li> </ul>
	<ul> <li>Increased SSC</li> </ul>	
	<ul> <li>Resuspension of contaminated sediments</li> </ul>	<ul> <li>Contaminated sediments</li> </ul>
	Hydrodynamic changes	<ul> <li>Hydrodynamic changes</li> </ul>
	<ul> <li>Invasive species</li> </ul>	<ul> <li>Invasive species</li> </ul>
	Pollution events	<ul> <li>Pollution (incl. light/noise)</li> </ul>
	Increased light pollution	
	Noise and vibration	
	Temperature changes	<ul> <li>EMF/temperature</li> </ul>
	• EMF	

# Effects considered within the screening matrices for onshore ecology features

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information #	Presented in screening matrices as
UK sites identified:  Chichester and Langstone Harbours SPA Portsmouth Harbour SPA	Alone:  • Disturbance & displacement  • Light pollution  • Indirect effects  • INIS  • Accidental spills  • Litter	<ul> <li>Alone:</li> <li>Disturbance &amp; displacement</li> <li>Light pollution</li> <li>Indirect effects</li> <li>INIS</li> <li>Accidental spills</li> <li>Litter</li> </ul>
	In combination:  • Disturbance & displacement  • Light pollution  • Indirect effects  • INIS  • Accidental spills  • Litter	In combination:  Disturbance & displacement  Light pollution Indirect effects INIS Accidental spills Litter
Pre-screened out sites:  Solent and Dorset Coast SPA Solent and Southampton Water SPA Butser Hill SAC Solent Maritime SAC	Alone:  Disturbance & displacement  Light pollution  Indirect effects  INIS  Accidental spills  Litter  In combination:  Disturbance & displacement  Light pollution  Indirect effects  INIS  Accidental spills  Litter	Alone:  Disturbance & displacement  Light pollution Indirect effects INIS Accidental spills Litter In combination: Disturbance & displacement Light pollution Indirect effects INIS Accidental spills Litter  Light pollution Light pollution Light pollution Light pollution Light pollution Light pollution Litter

## **STAGE 1: SCREENING MATRICES**

The European sites (within the UK marine area) included within the screening assessments are:

- Solent and Dorset Coast SPA
- Chichester and Langstone Harbours SPA
- Portsmouth Harbour SPA
- Solent and Southampton Water SPA
- Pagham Harbour SPA
- River Itchen SAC
- River Avon SAC
- River Axe SAC
- Plymouth Sound and Estuaries SAC
- Solent Maritime SAC
- South Wight Maritime SAC

Transboundary European sites included within the screening assessments for fish:

- Littoral Cauchois SAC
- Estuaires et littoral picards (baies de Somme et d'Authie) SAC
- Baie de Canche et couloir des trois estuaires SAC
- Baie de Seine Orientale SAC
- Estuaire de la Seine SAC

Transboundary European sites included within the screening assessments for marine ornithology:

Littoral Seino-Marin SPA

Transboundary European sites included within the screening assessments for marine mammals:

- Récifs Gris-Nez Blanc-Nez SAC
- Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC
- Baie de Canche et couloir des trois estuaires SAC
- Estuaires et littoral picards (baies de Somme et d'Authie) SAC
- Littoral Cauchois SAC
- Baie de Seine Orientale SAC
- Estuaire de la Seine SAC

Pre-screened out sites for marine ornithology features:

- Poole Harbour SPA
- Dungeness, Romney Marsh and Rye Bay SPA
- Estuaire et Marais de la Basse Seine SPA

Pre-screened out sites for marine mammal features:

- Southern North Sea SAC
- The Wash and North Norfolk Coast SAC

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- Pembrokeshire Marine SAC
- Cardigan Bay SAC

Pre-screened out sites for Annex I habitat features:

- Solent and Isle of Wight Lagoons SAC
- Wight-Barfleur Reef SAC
- Bassurelle Sandbank SAC
- Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC
- Studland to Portland SAC
- Littoral Cauchois SAC

Evidence for, or against, likely significant effects on the European site(s) and its qualifying feature(s) is detailed within the footnotes to the screening matrices below.

#### Matrix Key:

✓ = Likely significant effect cannot be excluded

**x** = Likely significant effect **can** be excluded

C = construction

O = operation (and repair/maintenance)

D = decommissioning

B = breeding

W = wintering/non-breeding

P = passage

Where effects are not applicable to a particular feature they are greyed out.

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### HRA Screening Matrix 1A: Solent and Dorset Coast SPA (Marine Ornithology)

Name of European Site: Solent and	Dorset (	Coast	SPA (N	/larine	Ornith	ology	)											
Distance to Proposed Development	: 0.0 km																	
					L	ikely l	Effects	of the	Prop	osed D	evelo	oment	(Alone	<u>e</u> )				
European site feature	I -	turbano placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Sandwich tern (B)	×b	×b	×b	√c	√c	√c	×d	×d	×d	×e	×e	×e	√f	√f	√f	√g	√g	√g
Little tern (B)	√a	√a	√a	√c	√c	√c	×d	×d	×d	×e	×e	×e	√f	√f	√f	√g	√g	√g
Common tern (B)	×b	×b	×b	√c	√c	√c	×d	×d	×d	Хe	×е	×е	√f	√f	√f	√g	√g	√g
Supporting habitat (water column)	×h	×h	×h	√i	√i	√i				×j	×j	×j	√k	√k	√k	√g	√g	√g

#### **Evidence supporting conclusions:**

- a. Due to a restricted foraging range, the presence of vessels and associated activities during all development phases may displace this moderately sensitive feature from favoured foraging habitat through both visual disturbance and unpredictable noise events. Therefore, LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Table 7.9 and 9.1).
- **b.** Given that these features are not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- c. Increases in suspended sediment concentrations as a result of HDD works, cable burial activities and cable maintenance may affect prey availability within the foraging range of these features. Therefore, LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Section 7.2.4 and 9.1.5, Table 7.9 and 9.1).
- d. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no LSE applies to collision (HRA Report (APP-491, Rev 006)Section 7.2.4,Table 7.9
- e. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- f. Unplanned oil or chemical spillages from vessels may occur during all development phases. Spills have the potential to directly affect these features when utilising the sea surface e.g. through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- **g.** Unplanned disposal of industrial or user plastic into the water column during all development phases has the potential to directly affect these features and their prey species present in the water column e.g. through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- h. Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- i. Increases in suspended sediment concentrations ('SSC') as a result of HDD works, cable burial activities and cable maintenance may increase turbidity of this supporting habitat, altering prey availability though changes in primary production by phytoplankton, as well as making it harder for visual foraging features to see prey from the sea surface. Therefore, LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- j. Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km²) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- **k.** Unplanned oil or chemical spillages from vessels may occur during all development phases. Oil can cause sublethal impacts on juvenile fish growth and survival, thus potentially affecting prey availability. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Section 7.2.4 and 9.1.5, Tables 7.9 and 9.1).

### HRA Screening Matrix 1B: Solent and Dorset Coast SPA (Marine Ornithology – In Combination)

Name of European Site: Solent an	d Dorse	et Coas	st SPA	(Marii	ne Orn	itholo	gy)											
<b>Distance to Proposed Developmen</b>	nt: 0 km	1																
					Likely	/ Effec	ts of th	ne Pro	posed	Devel	opmer	t (In C	ombin	ation)				
European site feature		turband placem		Indi	rect eff	fects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Sandwich tern (B)	×b	×b	×b	√a	√a	√a	Хc	Хc	×c	×d	×d	×d	√a	√a	√a	√a	√a	√a
Little tern (B)	√a	√a	√a	√a	√a	√a	×c	Хc	Хc	×d	×d	×d	√a	√a	√a	√a	√a	√a
Common tern (B)	×b	×b	×b	√a	√a	√a	ХC	Хc	Хc	×d	×d	×d	√a	√a	√a	√a	√a	√a
Supporting habitat (water column)	×e	Хe	Хe	√a	√a	√a				×f	×f	×f	√a	√a	√a	√a	√a	√a

#### **Evidence supporting conclusions:**

- a. LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 8.2.4 and 9.1.5, Table 9.1). Therefore, potential in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 1A and 1B).
- **b.** Given that these features are not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an in combination effect from displacement is considered to be negligible across all development phases. Therefore, no in combination LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 8.2.4).
- c. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no in combination LSE applies to collision (HRA Report (APP-491, Rev 006) Section 8.2.4).
- d. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no in combination LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 8.2.4).
- e. Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- f. Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km²) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

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# HRA Screening Matrix 2A: Chichester and Langstone Harbours SPA (Marine Ornithology)

Part	Distance to Proposed Development: 0.1 km																		
Dark-bellied brent goose (W)   C   O   D	·					L	ikely I	Effects	of the	Propo	sed D	evelop	ment	(Alone	<u>=</u> )				
Dark-bellied brent goose (W)   Shevider (W)   She	European site feature				Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
Sheduck (W)					С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Sheduck (W)	Dark-bellied brent goose (W)																		
Shoveler (W)   Wigeon (W)   W																			
Wigeon (W)																			
Pintall (W)	, ,																		
Teal (W) Red-breasted merganser (W) Ringed plover (W) Ringed plover (W) Ringed plover (W) Bar-talled godwit (W) Turnstone (W) Dunlin (W) Redshank (W) Sanderling (W)  Little tern (B)  Xb Xb Xb Xb Xb Xc C C Xc Xd Xd Xd Xd Xf Xf Xf Yg Yg Yg Yh																			
Red-breasted merganser (W)   Va   Va   Va   Va   Vc   Vc   Vc   Xe   Xe   Xe   Xe   Va   Vh   Vh   Vh   Vh   Vi   Vi   Vi   Vi																			
Grey plover (W) Ringed plover (W) Rar-tailed godwit (W) Sanderling (		√a	√a	√a	√c	√c	√c	×е	×е	×е				√h	√h	√h	√i	√i	√i
Ringed plover (W)																			
Curlew (W)         Bar-tailed godwit (W)         Bar-ta																			
Turnstone (W) Sanderling (W) Dunlin (W) Redshank (W) Sandwich tern (B)  Xb Xb Xb Xb Vc Vc Vc Xd Xd Xd Xd Xf Xf Xf Vg Vg Vg Vh Vh Vh Vt Utitle tern (B)  Xb Xb Xb Xb Xb Vc Vc Vc Xd Xd Xd Xd Xf Xf Xf Yg Vg Vg Vg Vh Vh Vh Vt Utitle tern (B)  Supporting Habitat (water column)  Xi Xi Xi Vj Vj Vj Vj Xg Xb																			
Turnstone (W) Sanderling (W) Dunlin (W) Redshank (W) Sandwich tern (B)  Xb Xb Xb Xb Vc Vc Vc Xd Xd Xd Xd Xf Xf Xf Vg Vg Vg Vh Vh Vh Vt Utitle tern (B)  Xb Xb Xb Xb Xb Vc Vc Vc Xd Xd Xd Xd Xf Xf Xf Yg Vg Vg Vg Vh Vh Vh Vt Utitle tern (B)  Supporting Habitat (water column)  Xi Xi Xi Vj Vj Vj Vj Xg Xb	Bar-tailed godwit (W)																		
Dunlin (W)  Redshank (W)  Sandwich tem (B)  Xb Xb Xb Xb Xc C C Xd Xd Xd Xf Xf Xf Yg Yg Yg Yh Yh Yh Y  Little tem (B)  Xb Xb Xb Xb Xb Xb Xb Xc Yc Yc Yc Xd Xd Xd Xf Xf Xf Xf Yg Yg Yg Yh Yh Yh Y  Common tem (B)  Xb Xb Xb Xb Xb Xb Xc Yc Yc Yc Xd Xd Xd Xf Xf Xf Xf Yg Yg Yg Yh Yh Yh Y  Supporting habitat (water column)  Xi Xi Xi Xi Yj Yj Yj X Xk Xk Xk Xk Yl Yl Yl Yl Yh Yh Y  Supporting Habitat Coastal Lagoons  Supporting Habitat Coastal reedbeds  Supporting Habitat Salicornia and other annuals colonising mud and sand  Supporting Habitat Salicornia and other annuals colonising mud and sand  Supporting Habitat Atlantic salt meadows  Supporting Habitat Intertidal sagarsas beds  Supporting Habitat Intertidal rock  Supporting Habitat Intertidal coarse sediment  Supporting Habitat Intertidal mixed sediment  Supporting Habitat Intertidal mixed sediment  Supporting Habitat Intertidal mud  Sup																			
Dunlin (W)  Redshank (W)  Sandwich tem (B)  Xb Xb Xb Xb Xc C C Xd Xd Xd Xf Xf Xf Yg Yg Yg Yh Yh Yh Y  Little tem (B)  Xb Xb Xb Xb Xb Xb Xb Xc Yc Yc Yc Xd Xd Xd Xf Xf Xf Xf Yg Yg Yg Yh Yh Yh Y  Common tem (B)  Xb Xb Xb Xb Xb Xb Xc Yc Yc Yc Xd Xd Xd Xf Xf Xf Xf Yg Yg Yg Yh Yh Yh Y  Supporting habitat (water column)  Xi Xi Xi Xi Yj Yj Yj X Xk Xk Xk Xk Yl Yl Yl Yl Yh Yh Y  Supporting Habitat Coastal Lagoons  Supporting Habitat Coastal reedbeds  Supporting Habitat Salicornia and other annuals colonising mud and sand  Supporting Habitat Salicornia and other annuals colonising mud and sand  Supporting Habitat Atlantic salt meadows  Supporting Habitat Intertidal sagarsas beds  Supporting Habitat Intertidal rock  Supporting Habitat Intertidal coarse sediment  Supporting Habitat Intertidal mixed sediment  Supporting Habitat Intertidal mixed sediment  Supporting Habitat Intertidal mud  Sup	Sanderling (W)																		
Sandwich tern (B)																			
Sandwich tern (B)	Redshank (W)																		
Common tern (B)		×b	×b	×b	√c	√c	√c	×d	×d	×d	×f	×f	×f	√g	√g	√g	√h	√h	√h
Supporting habitat (water column)  Xi Xi Xi Yj /j /j   Xk Xk Xk Xi	Little tern (B)	√a	√a	√a	√c	√c	√c	×d	×d	×d	×f	×f	×f	√g	√g	√g	√h	√h	√h
Supporting Habitat Coastal Lagoons Supporting Habitat Coastal reedbeds Supporting Habitat Freshwater and coastal grazing marsh Supporting Habitat Salicornia and other annuals colonising mud and sand Supporting Habitat Atlantic salt meadows Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand	Common tern (B)	×b	×b	×b	√c	√c	√c	×d	×d	×d	×f	×f	×f	√g	√g	√g	√h	√h	√h
Supporting Habitat Coastal reedbeds Supporting Habitat Freshwater and coastal grazing marsh Supporting Habitat Salicornia and other annuals colonising mud and sand Supporting Habitat Atlantic salt meadows Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand	Supporting habitat (water column)	Χi	×i	×i	√j	√j	√j				×k	×k	×k	√I	✓I	<b>√</b> I	√h	√h	√h
Supporting Habitat Freshwater and coastal grazing marsh Supporting Habitat Salicornia and other annuals colonising mud and sand Supporting Habitat Atlantic salt meadows Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand	Supporting Habitat Coastal Lagoons																		
Supporting Habitat Salicornia and other annuals colonising mud and sand  Supporting Habitat Atlantic salt meadows Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand	Supporting Habitat Coastal reedbeds																		
Supporting Habitat Atlantic salt meadows Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Atlantic salt meadows Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment	Supporting Habitat Salicornia and other annuals colonising mud and																		
Supporting Habitat Spartina swards Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Intertidal seagrass beds Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Intertidal rock Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Intertidal coarse sediment Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Intertidal mixed sediment Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																			
Supporting Habitat Intertidal sand and muddy sand																			
NUMBER OF THE PROPERTY OF THE	Supporting Habitat Intertidal sand and muddy sand Supporting Habitat Subtidal coarse sediment																		

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#### **Evidence supporting conclusions:**

- The presence of vessels and associated activities during all development phases may displace these moderately sensitive features from favoured foraging and/or roosting habitat through both visual disturbance and unpredictable noise events. Therefore, LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Given that these features are not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Increases in SSC as a result of HDD works, cable burial activities and cable maintenance may affect prey availability within these foraging range of these features. Therefore, LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no LSE applies to collision (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Structures or devices which have the potential to pose an above water collision risk to this feature will not be introduced during any development phase. Structures or devices within the water column associated with the Proposed Development will only be used in the context of operating vessels (e.g. vessels towing equipment). Below water collision risk is therefore considered to be negligible since it is likely that this moderately sensitive feature will simply avoid construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Unplanned oil or chemical spillages from vessels may occur during all development phases. Spills have the potential to directly affect these features when utilising the sea surface e.g. through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Unplanned disposal of industrial or user plastic into the water column during all development phases has the potential to directly affect these features and their prey species present in the water column e.g. through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Increases in SSC as a result of HDD works, cable burial activities and cable maintenance may increase turbidity of this supporting habitat, altering prey availability though changes in primary production by phytoplankton, as well as making it harder for visual foraging features to see prey from the sea surface. Therefore, LSE applies (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5. Tables 7.9 and 9.1).
- Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km<sup>2</sup>) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Unplanned oil or chemical spillages from vessels may occur during all development phases. Oil can cause sublethal impacts on juvenile fish growth and survival, thus potentially affecting prey availability. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).

## HRA Screening Matrix 2B: Chichester and Langstone Harbours SPA (Marine Ornithology – In Combination)

Name of European Site: Chichester and Langstone Harbours SPA	A (Mari	ne Orr	nitholo	gy)														
Distance to Proposed Development: 0.1 km																		
					Likely	Effect	ts of th	ne Pro	posed	Devel	opmen	t (In C	ombin	ation)	•			
European site feature	1	turbano placem		Indi	rect eff	ects	C	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Shelduck (W)																		
Shoveler (W)																		

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WSP/Natural Power

Distance to Proposed Development: 0.1 km																		
					Likely	Effec	ts of th	ne Pro <sub>l</sub>	posed	Devel	opmen	t (In C	ombin	ation)				
European site feature		urbano placem		Indi	rect eff	ects		Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Wigeon (W)																		
Pintail (W)																		
Teal (W)																		
Red-breasted merganser (W)	√a	√a	√a	√a	√a	√a	×d	×d	×d				√a	√a	√a	√a	√a	√a
Grey plover (W)																		
Ringed plover (W)																		
Curlew (W)																		
Bar-tailed godwit (W)																		
Turnstone (W)																		
Sanderling (W)																		
Dunlin (W)																		
Redshank (W)																		
Sandwich tern (B)	×b	×b	×b	√a	√a	√a	ХC	Хc	Хc	×e	×e	×e	√a	√a	√a	√a	√a	√a
Little tern (B)	√a	√a	√a	√a	√a	√a	Хc	Хc	Хc	×e	×e	×e	√a	√a	√a	√a	√a	√a
Common tern (B)	×b	×b	×b	√a	√a	√a	×c	×c	×c	×e	×e	×e	√a	√a	√a	√a	√a	√a
Supporting habitat (water column)	×f	×f	×f	√a	√a	√a				×g	×g	×g	√a	√a	√a	√a	√a	√a
Supporting Habitat Coastal Lagoons																		
Supporting Habitat Coastal reedbeds																		
Supporting Habitat Freshwater and coastal grazing marsh																		
Supporting Habitat Salicornia and other annuals colonising mud and																		
sand																		
Supporting Habitat Atlantic salt meadows																		
Supporting Habitat Spartina swards																		
Supporting Habitat Intertidal seagrass beds																		
Supporting Habitat Intertidal rock																		
Supporting Habitat Intertidal coarse sediment																		
Supporting Habitat Intertidal mixed sediment																		
Supporting Habitat Intertidal mud Supporting Habitat Intertidal sand and muddy sand																		

## **Evidence supporting conclusions:**

a. LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 8.2.4 and 9.1.5, Table 9.1). Therefore, potential in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 2A and 2B).

- **b.** Given that these features are not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an in combination effect from displacement is considered to be negligible across all development phases. Therefore, no in combination LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 8.2.4).
- c. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an in combination effect is therefore considered negligible and therefore no in combination LSE applies to collision (HRA Report (APP-491, Rev 006) Section 8.2.4).
- d. Structures or devices which have the potential to pose an above water collision risk to this feature will not be introduced during any development phase. Structures or devices within the water column associated with the Proposed Development will only be used in the context of operating vessels (e.g. vessels towing equipment). Below water collision risk is therefore considered to be negligible since it is likely that this moderately sensitive feature will simply avoid construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- e. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no in combination LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 8.2.4).
- f. Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- g. Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km²) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

### HRA Screening Matrix 2C: Chichester and Langstone Harbours SPA (Onshore Ecology)

Name of European Site: Chichester a	and Langsto	ne Ha	bours	SPA (Or	shore	Ornitho	ology)											
Distance to Proposed Development:	0.1 km																	
						L	ikely Ef	fects of	the Prop	osed De	velopm	ent (Alo	ne)					
European site feature		sturbar splace		Lig	ht pollu	ıtion	In	direct ef	fects		INIS		Acci	idental s	pills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Shelduck (W)	√a	×d	√a	Хe	Хe	×e	Xf	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Shoveler (W)	√a	×d	√a	Хe	Хe	Хe	Xf	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Wigeon (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Pintail (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Teal (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Red-breasted merganser (W)																		
Grey plover (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Ringed plover (W)	×b	×d	×b	Хe	×е	×е	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Curlew (W)	√a	×d	√a	Хe	×е	×е	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Bar-tailed godwit (W)	√a	×d	√a	×е	×e	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Turnstone (W)	×b	×d	×b	Хe	×е	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Sanderling (W)	×b	×d	×b	×e	×e	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Dunlin (W)	×b	×d	×b	Хe	×е	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Redshank (W)	√a	×d	√a	×e	×e	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Waterfowl assemblage (W)	√a	×d	√a	×e	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Sandwich tern (B)	×c	Хc	×c	×e	Хe	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j

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Name of European Site: Chichester and La	angsto	ne Hai	bours	SPA (Or	nshore	Ornitho	ology)											
Distance to Proposed Development: 0.1 kg	m																	
						L	ikely Ef	fects of	the Prop	osed De	velopm	ent ( <u>Alo</u>	<u>ne</u> )					
European site feature		sturbar splacei		Lig	tht pollu	ıtion	In	direct ef	fects		INIS		Acc	idental s	pills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Little tern (B)	Хc	Хc	Хc	×е	×e	×е	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Common tern (B)	Хc	Хc	Хc	Хe	×e	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Supporting habitat: freshwater and coastal grazing marsh	×k	×k	×k				√g	×g	√g	×h	×h	×h	√i	√i	√i	√j	√j	√j

#### **Evidence supporting conclusions:**

- a. Cutts et al. (2013) determines that these species are either highly or moderately sensitive to disturbance. All these species were recorded in varying numbers in intertidal areas adjacent to the onshore works of the Proposed Development (document reference 6.3.16.13, ES Technical Appendix 16.13). Therefore, LSE applies to disturbance and displacement via noise and visual impacts (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (see HRA Integrity Matrix 2C and 2D).
- **b.** Cutts et al. (2013) determines that turnstone, sanderling, ringed plover and dunlin are of low sensitivity to disturbance. Although all these species were found to be present in intertidal habitat adjacent to onshore works of the Proposed Development (document reference 6.3.16.13, ES Technical Appendix 16.13) these species are considered to be extremely tolerant of any disturbance mechanisms. from the Proposed Development and are likely to rapidly habituate. Therefore, no LSE applies to disturbance and displacement for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2. Tables 7.10 and 9.2).
- c. While tern colonies exist within both Chichester and Langstone Harbours, specific surveys for the Proposed Development did not locate any breeding individuals or indeed foraging flights (document reference 6.3.16.13. ES Technical Appendix 16.13). Therefore, terns are not expected to be exposed disturbance and displacement effects from any phase of the Proposed Development from onshore activities (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- There is predicted to be no disturbance or displacement events as a result of onshore activities during the operational phase. Therefore, no LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- Onshore works from the Proposed Development are not considered to result in any light spillage into the SPA. Therefore, no LSE applies to light pollution for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- Wading bird species are not expected to be affected by any changes in water turbidity. Increases in suspended sediment as a result of HDD works, cable burial activities and cable maintenance is expected to be highly localised and return to within comparable background concentrations within days. Terns are visual foragers and are likely to be affected by an increase in turbidity which can make it harder to see prey in the water column. They are considered to be moderately sensitive to habitat disturbance and subsequent potential effects on prey (Bradbury et al., 2014). Given the distance between the Proposed Development and favoured foraging and breeding grounds of tern species, it is considered that there is no potential for impact during any development phase. Therefore, no LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- Onshore works have the potential to result in temporary habitat loss of supporting / functionally linked habitat (thorough the Solent Wader and Brent Goose Strategy network) during the construction and decommissioning phases. Therefore, LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 2C and 2D).
- There is no pathway for onshore construction work activities associated with the Proposed Development to introduce invasive non-indigenous predators to tern breeding colonies. The risk of other invasive non-indigenous species affecting other waterbird species and supporting habitat is considered negligible through the techniques applied to construction (i.e. HDD). Therefore, no LSE applies to INIS (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- Unplanned oil or chemical spillages from construction activity may occur during all development phases. Spills have the potential to directly affect all SPA features when in contact supporting habitat through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 2C and 2D).

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- j. Unplanned disposal of industrial or user plastic during all development phases has the potential to directly affect SPA features and supporting habitat when utilising intertidal habitat through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (see HRA Integrity Matrix 2C and 2D).
- k. Disturbance and displacement of prey species present during all phases of development is considered to be negligible due to the construction methodology applied (HDD). Therefore, no LSE applies to disturbance and displacement for supporting habitat (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).

### HRA Screening Matrix 2D: Chichester and Langstone Harbours SPA (Onshore Ecology – In Combination)

Name of European Site: Chichester and La	angsto	ne Har	bours S	SPA (On	shore	Ornitho	ology –	In Comi	oination)									
Distance to Proposed Development: 0.1 kg	n																	
	Ī					Likely	Effects	of the l	Proposed	d Develor	ment (I	n Comb	ination	)				
European site feature	1	sturbar splacer		Lig	ht pollu			direct ef	•		INIS			idental s	pills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Shelduck (W)	√a	×d	√a	×e	×e	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Shoveler (W)	√a	×d	√a	Хe	Хe	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Wigeon (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Pintail (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Teal (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Red-breasted merganser (W)																		
Grey plover (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Ringed plover (W)	×b	×d	×b	Хe	Хe	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Curlew (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Bar-tailed godwit (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Turnstone (W)	×b	×d	×b	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Sanderling (W)	×b	×d	×b	Хe	×e	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Dunlin (W)	×b	×d	×b	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Redshank (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Waterfowl assemblage (W)	√a	×d	√a	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Sandwich tern (B)	×c	Хc	×c	Хe	Хe	Хe	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Little tern (B)	×c	Хc	Хc	×e	×e	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Common tern (B)	Хc	Хc	Хc	Хe	Хe	×e	×f	×f	×f	×h	×h	×h	√i	√i	√i	√j	√j	√j
Supporting habitat: freshwater and coastal grazing marsh	×k	×k	×k				√g	×g	√g	×h	×h	×h	√i	√i	√i	√j	√j	√j

#### **Evidence supporting conclusions:**

- a. LSE applies to the Proposed Development alone. Therefore, potential for adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 2D).
- **b.** Given that these features are not considered to be sensitive to disturbance the potential for an in combination effect from displacement is considered to be negligible across all development phases. Therefore, no in combination LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).

- c. Terns and red-breasted merganser being marine features which have either breeding colonies (terns) and wintering foraging areas (red-breasted merganser) that are distant from onshore components of the Proposed Development. These features are not expected to be exposed disturbance and displacement effects from any phase of the Proposed Development from onshore activities. Therefore, no in combination LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- d. Given that no operational effects of disturbance are predicted, no in combination LSE applies (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- e. Rev 003Onshore works from the Proposed Development are not considered to result in any light spillage into the SPA. Therefore, no in combination LSE applies for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- f. Given that wading bird species are not expected to be affected by any changes in water turbidity and the distance between the Proposed Development and favoured foraging and breeding grounds of tern species, it is considered that there is no potential for impact during any development phase. Therefore, no in combination LSE applies for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- g. LSE applies to the Proposed Development alone for the construction and decommissioning phases. Therefore, potential for adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 2D).
- h. There is no pathway for onshore construction work activities associated with the Proposed Development to introduce invasive non-indigenous predators to tern breeding colonies. The risk of other invasive non-indigenous species affecting other waterbird species and supporting habitat is considered negligible through the techniques applied to construction (i.e. HDD). Therefore, no in combination LSE applies for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).
- i. LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).. Therefore, potential for adverse effects on site
- j. LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).. Therefore, potential for adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 2D).
- **k.** Disturbance and displacement of prey species present during all phases of development is considered to be negligible. Therefore, no in combination LSE applies for these features (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Therefore, the potential for in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (see HRA Integrity Matrix 2D).

## HRA Screening Matrix 3A: Portsmouth Harbour SPA (Marine Ornithology)

Name of European Site: Portsmouth Harbour SPA (Marine Orni	thology	<b>v</b> )																
Distance to Proposed Development: 4.9 km																		
					L	ikely l	ffects	of the	Prop	osed D	)evelo	pment	(Alone	<del>)</del>				
European site feature		turban placen		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Red-breasted merganser (W)	×a	×a	×a	×b	×b	×b	хс	×c	Хc				√d	√d	√d	√e	√e	√e
Black-tailed godwit (W)																		
Dunlin (W)																		
Supporting habitat (water column)	×f	×f	×f	×g	×g	×g				×h	×h	×h	√i	√i	√i	√e	√e	√e
Supporting Habitat Coastal lagoons																		
Supporting Habitat Freshwater and coastal grazing marsh																		
Supporting Habitat Salicornia and other annuals colonising mud																		
and sand																		
Supporting Habitat Atlantic salt meadows																		
Supporting Habitat Spartina swards																		
Supporting Habitat Intertidal seagrass beds																		
Supporting Habitat Intertidal coarse sediments																		
Supporting Habitat Intertidal mixed sediments																		

AQUIND INTERCONNECTOR PINS Ref.: EN020022

WSP/Natural Power

Name of European Site: Portsmouth Harbour SPA (Mar	ine Ornithology	<b>/</b> )																
Distance to Proposed Development: 4.9 km																		
					L	ikely E	Effects	of the	Propo	osed D	evelop	ment	(Alone	<u> </u>				
European site feature		turban placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Supporting Habitat Intertidal mud																		
Supporting Habitat Subtidal mixed sediments																		
Supporting Habitat Subtidal mud																		

#### **Evidence supporting conclusions:**

- The distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure no disturbance or displacement of redbreasted mergansers utilising this SPA during any development phase (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Increases in SSC as a result of HDD works, cable burial activities and cable maintenance is expected to be highly localised. Given the distance between the Proposed Development and favoured foraging and roosting grounds in Portsmouth Harbour, it is considered that there is no potential for impact during any development phase (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Structures or devices which have the potential to pose an above water collision risk to this feature will not be introduced during any development phase. Structures or devices within the water column associated with the Proposed Development will only be used in the context of operating vessels (e.g. vessels towing equipment). Below water collision risk is therefore considered to be negligible since it is likely that this moderately sensitive feature will simply avoid construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4. Table 7.9).
- Unplanned oil or chemical spillages from vessels may occur during all development phases. Spills have the potential to directly affect these features when utilising the sea surface e.g. through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Unplanned disposal of industrial or user plastic into the water column during all development phases has the potential to directly affect these features and their prey species present in the water column e.g. through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Increases in SSC as a result of HDD works, cable burial activities and cable maintenance are expected to be highly localised and will not alter prey availability in the water column at Portsmouth Harbour due to distance. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km<sup>2</sup>) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Unplanned oil or chemical spillages from vessels may occur during all development phases. Oil can cause sublethal impacts on juvenile fish growth and survival, thus potentially affecting prey availability. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).

### HRA Screening Matrix 3B: Portsmouth Harbour SPA (Marine Ornithology – In Combination)

Distance to Proposed Development: 4.9 km					I :leals	- F#4	4£ 41	D		David		4 /lm C	a la !	-4!N				
European site feature		turbano placem		Indi	rect eff		ts of th	ollisio	•	Devel	INIS	t ( <u>in C</u>		dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Red-breasted merganser (W)	×b	×b	×b	×c	×c	×c	×d	×d	×d				√a	√a	√a	√a	√a	√a
Black-tailed godwit (W)																		
Dunlin (W)																		
Supporting habitat (water column)	×e	×e	Хe	×f	×f	×f				×g	×g	×g	√a	√a	√a	√a	√a	√a
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuals colonising																		
mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediments																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Subtidal mixed sediments																		
Supporting habitat Subtidal mud																		

#### **Evidence supporting conclusions:**

- a. LSE applies to the Proposed Development alone. (HRA Report (APP-491, Rev 006) (Section 8.2.4 and 9.1.5) Table 9.1). Therefore, potential in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 3A and 3B)
- b. The distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure no disturbance or displacement of red-breasted mergansers utilising this SPA during any development phase. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- c. Increases in SSC as a result of HDD works, cable burial activities and cable maintenance is expected to be highly localised. Given the distance between the Proposed Development and favoured foraging and roosting grounds in Portsmouth Harbour, it is considered that there is no potential for in combination impact during any development phase (HRA Report (APP-491, Rev 006) Section 8.2.4).
- d. Structures or devices which have the potential to pose an above water collision risk to this feature will not be introduced during any development phase. Structures or devices within the water column associated with the Proposed Development will only be used in the context of operating vessels (e.g. vessels towing equipment). Below water collision risk is therefore considered to be negligible since it is likely that this moderately sensitive feature will simply avoid construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- e. Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

- Increases in SSC as a result of HDD works, cable burial activities and cable maintenance are expected to be highly localised and will not alter prey availability in the water column at Portsmouth Harbour due to distance. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km<sup>2</sup>) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

### HRA Screening Matrix 3C: Portsmouth Harbour SPA (Onshore Ecology)

Distance to Proposed Development: 4.9 k	m																	
						Like	ely Effect	ts of the	Propos	sed Dev	elopmer	nt ( <u>Alone</u>	<u>e)</u>					
European site feature	1	turbance placeme		Li	ght pollu	tion	Inc	lirect effe	ects		INIS		Acc	idental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	√a	×b	√a	×d	×d	×d	×e	×e	Хe	×g	×g	×g	√h	√h	√h	√i	√i	√i
Red-breasted merganser (W)																		
Black-tailed godwit (W)	×c	×b	Хc	×d	×d	×d	×e	×e	×e	×g	×g	×g	√h	√h	√h	√i	√i	√i
Dunlin (W)	×c	×b	Хc	×d	×d	×d	×e	×e	×e	×g	×g	×g	√h	√h	√h	√i	√i	√i
Supporting habitat: freshwater and grazing marsh	×c	×b	×c				√f	√f	√f	×g	×g	×g	√h	√h	√h	√i	√i	√i

## **Evidence supporting conclusions:**

- a. Cutts et al. (2013) determines that dark-bellied brent goose is highly sensitive to disturbance. While the distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure that there no disturbance or displacement direct to the SPA, there is potential for brent geese to be disturbed when using functionally linked / supporting habitat (SWBGS) during the construction and decommissioning phases. Therefore, LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (see HRA Integrity Matrix 3C and 3D).
- b. There is predicted to be no disturbance or displacement events as a result of onshore activities during the operational phase. Therefore, no LSE applies to disturbance and displacement for these features (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- c. The distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure no disturbance or displacement of any qualifying features or supporting habitat takes place during any development phase, while supporting habitat is not sensitive to disturbance effects from noise or vibration. Black-tailed Godwit and dunlin do not utilise SWBGS sites potentially impacted by the Proposed Development. Therefore, no LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- d. Rev 003The distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure no light pollution effects of any qualifying features or supporting habitat takes place during any development phase. Therefore, no LSE applies to light pollution (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- e. Increases in suspended sediment as a result of HDD works, cable burial activities and cable maintenance are expected to be highly localised and return to within comparable background concentrations within days. Given the distance between the Proposed Development and favoured foraging, breeding and roosting grounds of the SPA, it is considered that there is no potential for impact during any development phase on either qualifying features or supporting habitat. Therefore, no LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- f. Onshore works have the potential to result in temporary habitat loss of supporting / functionally linked habitat (thorough the Solent Wader and Brent Goose Strategy network) during the construction and decommissioning phases. Therefore, LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 3C and 3D).
- There is no pathway for onshore construction work activities associated with the Proposed Development to introduce invasive non-indigenous species to the SPA. Therefore, no LSE applies to INIS.

- h. Unplanned oil or chemical spillages from construction activity may occur during all development phases. Spills have the potential to directly affect all SPA features when in contact supporting habitat through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Potential adverse effects on site integrity are considered in the Stage2 Integrity matrices below (see HRA Integrity Matrix 3C and 3D).
- i. Unplanned disposal of industrial or user plastic during all development phases has the potential to directly affect SPA features and supporting habitat when utilising intertidal habitat through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Potential adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 3C and 3D).

## HRA Screening Matrix 3D: Portsmouth Harbour SPA (Onshore Ecology – In Combination)

Distance to Proposed Development: 4.9 km	n																	
		·			L	ikely Ef	fects of t	he Prop	osed D	evelopr	nent ( <u>In c</u>	combina	ation)					
European site feature	1	urbance placeme		Lig	ght pollut	tion	Indi	rect effe	cts		INIS		Acci	idental s	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	√a	×b	√a	×d	×d	×d	Хe	×е	Хe	×g	×g	×g	√h	√h	√h	√i	√i	√i
Red-breasted merganser (W)																		
Black-tailed godwit (W)	Хc	×b	Хc	×d	×d	×d	Хe	Хe	Хe	×g	×g	×g	√h	√h	√h	√i	√i	√i
Dunlin (W)	ХC	×b	Хc	×d	×d	×d	Хe	×е	Хe	×g	×g	×g	√h	√h	√h	√i	√i	√i
Supporting habitat: freshwater and grazing marsh	×c	×b	×c				√f	√f	√f	×g	×g	×g	√h	√h	√h	√i	√i	√i

#### **Evidence supporting conclusions:**

- a. LSE applies to the Proposed Development alone. Therefore, potential for adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (see HRA Integrity Matrix 3D).
- **b.** There is predicted to be no disturbance or displacement events as a result of onshore activities during the operational phase. Therefore, no in combination LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- c. The distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure no disturbance or displacement of any qualifying features or supporting habitat takes place during any development phase while supporting habitat is not sensitive to disturbance effects from noise or vibration. Black-tailed Godwit and dunlin do not utilise SWBGS sites potentially impacted by the Proposed Development due to absence of appropriate habitat. Therefore, no in combination LSE applies to disturbance and displacement (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- **d.** Rev 003The distance between the Proposed Development and favoured foraging/roosting areas in Portsmouth Harbour is considered to be sufficient as to ensure no light pollution effects of any qualifying features or supporting habitat takes place during any development phase. Therefore, no in combination LSE applies to light pollution (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- e. Increases in suspended sediment as a result of HDD works, cable burial activities and cable maintenance is expected to be highly localised and return to within comparable background concentrations within days. Given the distance between the Proposed Development and favoured foraging, breeding and roosting grounds of the SPA, it is considered that there is no potential for impact during any development phase on either qualifying features or supporting habitat. Therefore, no in combination LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- f. LSE applies to the Proposed Development alone. Therefore, potential for adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 3D).
- g. There is no pathway for onshore construction work activities associated with the Proposed Development to introduce invasive non-indigenous species to the SPA. Therefore, no in combination LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.3 and Table 7.10).
- h. LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2).. Therefore, potential for adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 3D).

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i. LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 7.3 and 9.2, Tables 7.10 and 9.2). Therefore, the potential for in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (see HRA Integrity Matrix 3D).

# HRA Screening Matrix 4A: Solent and Southampton Water SPA (Marine Ornithology)

Name of European Site: Solent and Southampton Water SPA (Marine	Ornitho	ology)																
Distance to Proposed Development: 6.6 km																		
					L	ikely E	Effects	of the	Prop	osed D	evelop	oment	(Alone	<u>e</u> )				
European site feature		turbano placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Teal (W)																		
Ringed plover (W)																		
Black-tailed godwit (W)																		
Mediterranean gull (B)	×f	×f	×f	×g	×g	×g	×b	×b	×b	×c	×c	×c	√d	√d	√d	√e	√e	√e
Sandwich tern (B)	×f	×f	×f	×g	×g	×g	×b	×b	×b	×c	Хc	Хc	√d	√d	√d	√e	√e	√e
Little tern (B)	×a	×a	×a	×a	×a	×a	×b	×b	×b	×c	Хc	×c	√d	√d	√d	√e	√e	√e
Roseate tern (B)	×f	×f	×f	×g	×g	×g	×b	×b	×b	Хc	Хc	Хc	√d	√d	√d	√e	√e	√e
Common tern (B)	×f	×f	×f	×g	×g	×g	×b	×b	×b	Хc	×c	×c	√d	√d	√d	√e	√e	√e
Supporting habitat (water column)	×h	×h	×h	×g	×g	×g				×i	×i	×i	√j	√j	√j	√e	√e	√e
Supporting habitat Coastal lagoons																		
Supporting habitat Coastal reedbeds																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuls colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal rocks																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		
Supporting habitat Intertidal rock																		
Supporting habitat Subtidal seagrass beds																		
Supporting habitat Circalittoral rock																		

## **Evidence supporting conclusions:**

a. Important breeding and foraging areas within this SPA are located >15 km from the Proposed Development. Therefore, it is considered that there is no potential for impact during any development phase based on this feature's restricted foraging range (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).

- Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no LSE applies to collision (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Unplanned oil or chemical spillages from vessels may occur during all development phases. Spills have the potential to directly affect these features when utilising the sea surface e.g. through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Unplanned disposal of industrial or user plastic into the water column during all development phases has the potential to directly affect these features and their prey species present in the water column e.g. through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- Given that these features are not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Changes in prev availability and behaviour resulting from marine works across all development phases has not been identified as likely to occur at a scale as to affect these features. The potential for an effect is considered negligible and therefore no LSE applies to changes in prey (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km<sup>2</sup>) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- Unplanned oil or chemical spillages from vessels may occur during all development phases. Oil can cause sublethal impacts on juvenile fish growth and survival, thus potentially affecting prey availability. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).

## HRA Screening Matrix 4B: Solent and Southampton Water SPA (Marine Ornithology – In Combination)

Name of European Site: Solent and Southampton Water SPA (Marine	Ornith	nology	·)															
Distance to Proposed Development: 6.6 km																		
					Likely	Effec	ts of th	ne Pro	posed	Devel	opmen	t (In C	ombin	ation)				
European site feature		turbano placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Teal (W)																		
Ringed plover (W)																		
Black-tailed godwit (W)																		
Mediterranean gull (B)	Хe	Хe	Хe	×f	×f	×f	Хc	Хc	Хc	×d	×d	×d	√a	√a	√a	√a	√a	√a
Sandwich tern (B)	×e	Хe	Хe	×f	×f	×f	ХC	ХC	ХC	×d	×d	×d	√a	√a	√a	√a	√a	√a
Little tern (B)	×b	×b	×b	×b	×b	×b	Хc	Хc	Хc	×d	×d	×d	√a	√a	√a	√a	√a	√a
Roseate tern (B)	Хe	Хe	Хe	×f	×f	×f	Хc	Хc	Хc	×d	×d	×d	√a	√a	√a	√a	√a	√a
Common tern (B)	×e	×e	×e	×f	×f	×f	×c	×c	×c	×d	×d	×d	√a	√a	√a	√a	√a	√a
Supporting habitat (water column)	×g	×g	×g	×f	×f	×f				×h	×h	×h	√a	√a	√a	√a	√a	√a
Supporting habitat Coastal lagoons																		
Supporting habitat Coastal reedbeds																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuls colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		

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Name of European Site: Solent and Southampton Water SF	A (Marine Ornith	nology	<b>'</b> )															
Distance to Proposed Development: 6.6 km																		
					Likely	Effec	ts of th	ne Proj	posed	Devel	opmen	t ( <u>In C</u>	ombin	ation)				'
European site feature	<b>I</b>	turban placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal rocks																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		
Supporting habitat Intertidal rock																		
Supporting habitat Subtidal seagrass beds																		
Supporting habitat Circalittoral rock																		

#### **Evidence supporting conclusions:**

- LSE applies to the Proposed Development alone. (HRA Report (APP-491, Rev 006) Sections 8.2.4 and 9.1.5, Table 9.1). Therefore, potential in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 4A and 4B).
- Important breeding and foraging areas within this SPA are located >15 km from the Proposed Development. Therefore, it is considered that there is no potential for impact during any development phase based on this feature's restricted foraging range. Therefore, no in combination LSE can be concluded (HRA Report (APP-491, Rev 006) Section 8.2.4).
- Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an in combination effect is therefore considered negligible and therefore no in combination LSE applies to collision (HRA Report (APP-491, Rev 006) Section 8.2.4).
- There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no in combination LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 8.2.4).
- Given that these features are not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no in combination LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 8.2.4).
- Changes in prey availability and behaviour resulting from marine works across all development phases has not been identified as likely to occur at a scale as to affect these features. The potential for an effect is considered negligible and therefore no in combination LSE applies to changes in prey (HRA Report (APP-491, Rev 006) Section 8.2.4).
- Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prev species present in the water column. The introduction of non-burial protection (0.7 km<sup>2</sup>) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

### HRA Screening Matrix 5A: Pagham Harbour SPA (Marine Ornithology)

Distance to Proposed Development: 9.5 km																		
European site feature		urband		Indi	rect eff			of the Collision	•	osed D	INIS	oment		e) dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Ruff (W)																		
Little tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (B)	×b	×b	×b	×c	Хc	×c	×d	×d	×d	×e	×e	×e	√f	√f	√f	√g	√g	√g
Supporting habitat (water column)	×h	×h	×h	×c	Хc	×c				×i	×i	×i	√j	√j	√j	√g	√g	√g
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Mediterranean and thermo-Atlantic halophilous																		
scrubs																		
Supporting habitat Salicornia and other annuals colonising mud and																		
sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		

#### **Evidence supporting conclusions:**

- a. There is no pathway for marine works to impact this feature as the Proposed Development is situated outside the mean-maximum foraging range (little tern 6.3 km; Thaxter et al. 2012) (HRA Report (APP-491, Rev 006) Section 6.2.5, Table 6.6).
- **b.** Given that this feature is not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no LSE applies to disturbance & displacement for this feature (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- c. Changes in prey availability and behaviour resulting from marine works across all development phases has not been identified as likely to occur at a scale as to affect these features. The potential for an effect is considered negligible and therefore no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- d. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no LSE applies to collision (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- e. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for this feature and therefore no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- f. Unplanned oil or chemical spillages from vessels may occur during all development phases. Spills have the potential to directly affect these features when utilising the sea surface e.g. through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).
- g. Unplanned disposal of industrial or user plastic into the water column during all development phases has the potential to directly affect these features and their prey species present in the water column e.g. through ingestion or entanglement resulting in mortality. Therefore, LSE applies to litter (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).

- h. Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- i. Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km²) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no LSE applies (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- j. Unplanned oil or chemical spillages from vessels may occur during all development phases. Oil can cause sublethal impacts on juvenile fish growth and survival, thus potentially affecting prey availability. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Sections 7.2.4 and 9.1.5, Tables 7.9 and 9.1).

## HRA Screening Matrix 5B: Pagham Harbour SPA (Marine Ornithology – In Combination)

Distance to Proposed Development: 9.5 km																		
Biotaine to Frepeded Bevelopment. die kin					Likely	Effec	ts of th	ne Proj	oosed	Develo	opmen	t (In C	ombin	ation)				
European site feature	_	turbano placem		Indi	rect eff			Collisio			INIS	`		dental s	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Ruff (W)																		
Little tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (B)	×c	×c	ХC	×d	×d	×d	×e	×e	×е	×f	×f	×f	√b	√b	√b	√b	√b	√b
Supporting habitat (water column)	×g	×g	×g	×d	×d	×d				×h	×h	×h	√b	√b	√b	√b	√b	√b
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Mediterranean and thermo-Atlantic halophilous scrubs																		
Supporting habitat Salicornia and other annuals colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		

#### **Evidence supporting conclusions:**

- a. There is no pathway for marine works to impact this feature as the Proposed Development is situated outside the mean-maximum foraging range (little tern 6.3 km; Thaxter et al. 2012) (HRA Report (APP-491, Rev 006) (Section 6.2.5) Table 6.6).
- **b.** LSE applies to the Proposed Development alone (HRA Report (APP-491, Rev 006) Sections 8.2.4 and 9.1.5, Table 9.1). Therefore, potential in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 5A and 5B).
- c. Given that this feature is not considered to be sensitive to disturbance from vessel traffic and associated activities, the potential for an in combination effect from displacement is considered to be negligible across all development phases. Therefore, no in combination LSE applies to disturbance & displacement for this feature (HRA Report (APP-491, Rev 006) Section 8.2.4).
- d. Changes in prey availability and behaviour resulting from marine works across all development phases has not been identified as likely to occur at a scale as to affect these features. The potential for an in combination effect is considered negligible and therefore no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

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- e. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an in combination effect is therefore considered negligible and therefore no in combination LSE applies to collision (HRA Report (APP-491, Rev 006) Section 8.2.4).
- f. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for this feature and therefore no in combination LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 8.2.4).
- g. Disturbance and displacement of prey species present within the water column during all phases of development is considered to be negligible since it is likely that fish species present in the Solent are accustomed to vessel traffic and the presence of vessels towing equipment (e.g. commercial fishing vessels) and will simply navigate round or under any construction or maintenance vessels. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).
- h. Invasive species may be introduced into the water column via biofouling or ballast water from vessels. However, these will not be harmful to prey species present in the water column. The introduction of non-burial protection (0.7 km²) is not predicted to affect the abundance and distribution of INIS which are already abundant and widely distributed in the English Channel. Therefore, no in combination LSE applies (HRA Report (APP-491, Rev 006) Section 8.2.4).

## HRA Screening Matrix 6: River Itchen SAC (Fish)

Name of European site and designation: River Itchen SAC (Fish)																											
EU Code: UK0012599																											
Distance to Proposed Development: 27.5 km																											
European site features										Like	ely I	Effec	cts c	f the	e Pro	оро	sed	Deve	lopr	nen	t						
Effect		creas SC	sed	Ph <u>j</u> Inju	ysica ıry	al	l	asiv ecie:			olluti ents		1	ise a ratio		ı	sual sturk	bance	El	ИF			empe hange	erature es		com ects	bination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	О	D	С	0	D	С	0	D
1106 Atlantic salmon (Salmo salar)	√ a	√ a	√a	b X	p X	X b	X C	X C	X C	√ d	√ d	√ d	× e	× e	× e	X f	X f	×f		x g			X h		i	i	√i
1044 Southern damselfly (Coenagrion mercurial)																											
1163 Bullhead (Cottus gobio)																											
1092 White-clawed (or Atlantic stream) crayfish																											
1096 Brook lamprey (Lampetra planeri)																											
1355 Otter (Lutra lutra)																											
3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation																											

#### **Evidence supporting conclusions:**

- **a.** The potential increase in SSC as a result of both inshore and marine construction, operation and decommissioning activities may cause a barrier to migration, as such it is considered that LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.2 and 9.1).
- **b.** Salmon are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2).

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Document Ref: HRA Report: Appendix 1 Screening and Integrity Matrices

- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm salmon given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2).
- **d.** Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.2 and 9.1, and Integrity Matrix 9 below).
- **e.** Salmon are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2).
- f. Salmon will be accustomed to vessels traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2).
- g. Salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with EMF during operation of the Proposed Development. In addition, salmon show a lack of behavioural response to EMF below 95 μT with predicted EMF for the Proposed Development being 42 μT. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.3).
- h. Salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with any temperature changes during operation of the Proposed Development. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.3).
- i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on salmon with the exception of SSC and pollution events. Therefore LSE cannot be ruled out for both of these effects in combination (HRA Report (APP-491, Rev 006) Sections 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 9 below).

### HRA Screening Matrix 7: River Avon SAC (Fish)

Name of European site and designation: River Avon SAC (Fish)																											
EU Code: UK0013016																											
Distance to Proposed Development: 51.4 km																											
European site features										L	ikel	y Ef	fects	s of	the P	ropo	sed	Devel	opn	nent							
Effect		crea SC	sed	1	iysica ury	al	1	/asi\ ecie		1	ollut ent		1	oise brati		I	ual sturb	ance	ΕN	1F			mpei ange	rature s		com ects	bination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1095 Sea lamprey (Petromyzon marinus)	√ a	1	√ a	X b	X b	X b	X C	1	1	Ι.	√ d	√ d	× e	×	×е					X g			X h		√ i	√ i	√i
1106 Atlantic salmon	√ a	√ a	√ a	X b	X b	X b	X C	X C	1	Ι.		1	1	×	×е	X f	X f	×f		x g			X h		√ i	√ i	√i
1016 Desmoulin's whorl snail (Vertigo moulinsiana)																											
1096 Brook lamprey																											
1163 Bullhead																											
3260 Water courses of plain to montane levels with the Ranunclion fluitantis and Callitricho-Batrachion vegetation																											

**Evidence supporting conclusions:** 

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- a. The potential increase in SSC as a result of both inshore and marine construction, operation and decommissioning activities may cause a barrier to migration, as such it is considered that LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.2, 7.6 and 9.1).
- b. Both salmon and sea lamprey are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2 and 7.6).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm salmon or sea lamprey given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2 and 7.6).
- d. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.2, 7.6 and 9.1, and Integrity Matrix 10 below).
- e. Salmon and sea lamprey are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2. Tables 7.2 and 7.6).
- f. Salmon and sea lamprey will be accustomed to vessels traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2 and 7.6).
- Salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with EMF during operation of the Proposed Development. In addition, salmon show a lack of behavioural response to EMF below 95 µT with predicted EMF for the Proposed Development being 42 µT. Sea lamprey use both the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3 and 7.7).
- h. Salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with any temperature changes during operation of the Proposed Development. Sea lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.3).
- i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on salmon and sea lamprey with the exception of SSC and pollution events. Therefore, LSE cannot be ruled out for both of these effects in combination (HRA Report (APP-491, Rev 006) Sections 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 10 below).

# HRA Screening Matrix 8: River Axe SAC (Fish)

Name of European site and designation: River Axe SAC (Fish)																											
EU Code: UK0030248																											
Distance to Proposed Development: 168 km																											
European site features										Lik	cely	Effe	ects	of tl	he Pr	opos	sed	Devel	opm	ent							
Effect	Ind SS	creas SC	sed	Ph <sub>.</sub> Inji	ysica ury	al		asiv ecies		l	olluti ents		1	oise a			ual sturb	ance	ΕN	1F			mper ange:	ature S		mbin ects	nation
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1095 Sea lamprey	X a	x a	x a	l		X b	X C	×	X C	1		1	× e	× e	×e					X f			x g		√ h	√ h	√h
1096 Brook lamprey																											
1163 Bullhead																											

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Name of European site and designation: River Axe SAC (Fish)																												
EU Code: UK0030248																												
Distance to Proposed Development: 168 km																												
European site features											Lik	ely	Effe	cts	of th	ne Pr	оро	sed	Devel	opm	ent							
opean site features		crea SC	ased		Phy Injui	vsica ry	al	I	asiv ecies		Pol eve			ı	ise a ratio			sual sturk	oance	ΕN	IF			mpei ange	rature s		mbir ects	ation
Stage of Development	С	0		) (	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
3260 Water courses of plain to montane levels with the Ranunclion fluitantis and Callitricho-Batrachion vegetation																												

- **a.** Sea lamprey (and transformers) are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through of navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- **b.** Sea lamprey are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm sea lamprey given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- d. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.6 and 9.1 and Integrity Matrix 11).
- e. Sea lamprey are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- f. Sea lamprey use both the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.7).
- g. Sea lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- h. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on sea lamprey with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination (HRA Report (APP-491, Rev 006) Sections 8.2.2 and 9.1.3, Table 9.1).

# HRA Screening Matrix 9: Plymouth Sound and Estuaries SAC (Fish)

Name of European site and designation: Plymouth Sound and	Estu	arie	s SA	C (F	Fish	)																					
EU Code: UK0030248																											
Distance to Proposed Development: 229 km																											
European site features										Li	ikely	y Ef	fects	s of	the P	rop	osed	d Deve	elop	men	ıt						
Effect	Ind SS	creas SC	sed	Ph <u>:</u> Inju	ysica ury	al		asiv ecies		l	llutio ents		1	ise a		1	sual sturb	ance	EΛ	1F			mpe ange	rature s		comb ects	bination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1102 Allis shad (Alosa alosa)	X a	X a	X a		X b	X b	X C	×	X C	√ d	√ d	√ d	× e	× e	×е	X f	X f	×f		x g			X h		√ i	√ i	√i
1110 Sandbanks which are slightly covered by sea water all the time																											
1130 Estuaries																											
1160 Large shallow inlets and bays																											
1170 Reefs																											
1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)																											
1140 Mudflats and sandflats not covered by seawater at low tide																											
1441 Shore dock																											

### **Evidence supporting conclusions:**

- a. Allis shad are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through of navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.4).
- b. Allis shad are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.4).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm allis shad given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.4).
- d. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.4 and 9.1, and Integrity Matrix 12 below).
- e. Allis shad are hearing specialists due to the coupling of the ear with the swim bladder. Although TTS may occur if an individual is within 160m of trenching equipment it is considered as this species is highly mobile and generally pelagic that they will move away before an impact occurs. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.4).
- f. Allis shad will be accustomed to vessels traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.4).
- g. Allis shad are generally pelagic so will not come into contact with EMF during operation of the Proposed Development. In addition, shad do not possess ampullary organs, instead relying on sight or sensory organs to locate prey so are not susceptible to EMF. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.5).
- h. Allis shad are generally pelagic so will not come into contact with any temperature changes during operation of the Proposed Development. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.5).

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i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on allis shad with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination (HRA Report (APP-491, Rev 006) Sections 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 12 below).

# HRA Screening Matrix 10A: Littoral Seino-Marin SPA (Marine Ornithology)

Distance to Proposed Develop	oment:	30.6 k	m															
		00101			L	ikely l	Effects	of the	Propo	sed D	evelor	oment	(Alone	<del>)</del>				
European site feature		turband		Indi	rect eff			Collisio			INIS			dental :	spills		Litter	
	C	placem O	ent D	С		1			D		0	_	С			С		D
Greylag goose (W)			D		0	D	С	0	D	С		D		0	D		0	U
White-fronted goose (W)																		
Shelduck (W)																		
Eider (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Velvet scoter (W)		^a		^a			^a	^a	^a	^a	^a	^a	^a	_ ^a	^a	^a	^a	
Common scoter (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Red-breasted merganser (W)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Red-throated diver (W)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Black-throated diver (W)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great northern diver (W)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Storm petrel (P)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Leach's storm petrel (P)	^a			^a	^a	^a	^a	^a	^a	^a	^a	^a		^a	^a	^a	^a	^a
Fulmar (B)	×b	×b	×b	×c	×c	×c	×d	×d	×d	×e	×e	×e	√f	√f	√f	√g	√g	√g
Manx shearwater (P)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×g	×a	×g
Balearic shearwater (P)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great crested grebe (W)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Slavonian grebe (W)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Black-necked grebe (P)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Spoonbill (W)	^a			^a	^a	^a	^a	^a	^a	^a	^a	^a		^a	^a	^a	^a	^a
Little egret (W)																		
Gannet (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Shag (B)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Cormorant (B)	Xa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a	^a
Honey buzzard (W) Hen harrier (W)																		
Avocet (W) Purple sandpiper (W)																		
Common sandpiper (W)																		
Kittiwake (B)	×b	×b	×b	×c	×c	×c	×d	×d	×d	×e	×e	×e	√f	√f	√f	1/~	1/~	100
, ,	<b>^</b> D	^ D	<b>^</b> ₽	^ C	^ C	^6	^u	_ ∧u	_^u	^e	^e	^e	¥ I	¥ I	¥ I	√g	√g	√g
Sabine's gull (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	<b>V</b> 0	×a	×a	×a	V~
Little gull (P) Mediterranean gull (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a ×a	×a	×a	×a	×a ×a

<b>Distance to Proposed Develo</b>	pment:	30.6 k	m															
					L	ikely l	Effects	of the	Propo	sed D	evelop	ment	(Alone	<u>e</u> )				
European site feature	ı	turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Great black-backed gull (B)	×b	×b	×b	×c	×c	×c	×d	×d	×d	×e	×е	×e	√f	√f	√f	√g	√g	√g
Herring gull (B)	×b	×b	×b	×c	Хc	×c	×d	×d	×d	×e	Хe	×e	√f	√f	√f	√g	√g	√g
Lesser black-backed gull (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Gull-billed tern (P)																		
Sandwich tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Little tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Arctic tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great skua (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Pomarine skua (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Arctic skua (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Guillemot (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Razorbill (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Short-eared owl (W)																		
Merlin (W)																		
Peregrine (B)																		
Woodlark (W)																		

- a. There is no pathway for marine works to impact these features due to distance (Thaxter et al. 2012) (HRA Report (APP-491, Rev 006) Section 6.2.5, Table 6.6).
- **b.** Given that these features are not considered to be vulnerable to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- c. Change in prey availability and behaviour resulting from marine works across all development phases has not been identified as likely to occur at a scale as to affect these features. Given the short term and temporary nature of any effect and the assessment of fish and benthic ecology, the potential for an effect is considered negligible. Therefore, no LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Section 7.2.4 Table 7.9).
- d. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no LSE applies to collision (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- e. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 7.2.4, Table 7.9).
- f. Unplanned oil or chemical spillages from vessels may occur during all development phases. Spills have the potential to directly affect these features when utilising the sea surface e.g. through direct oiling resulting in mortality. Therefore, LSE applies to accidental spills. (HRA Report (APP-491, Rev 006) Section 7.2.4 and 9.1.5, Tables 7.9 and 9.1 and Integrity Matrix 6A)
- g. Unplanned disposal of industrial or user plastic during all development phases has the potential to directly affect these features when utilising the sea surface e.g. through ingestion or entanglement resulting in mortality. Therefore, LSE applies to accidental spills (HRA Report (APP-491, Rev 006) Section 7.2.4 and 9.1.5, Tables 7.9 and 9.1 and Integrity Matrix 6A).

# HRA Screening Matrix 10B: Littoral Seino-Marin SPA (Marine Ornithology – In Combination)

<b>Distance to Proposed Develop</b>	ment: 3	30.6 km	1															
					Likely	Effect	s of th	e Prop	oosed	Develo	pmen	t (In C	ombin	ation)				
European site feature		turband placem		Indii	rect eff	ects	C	Collision	n		INIS		Acci	dental	spills		Litter	
	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Greylag goose (W)																		
White-fronted goose (W)																		
Shelduck (W)																		
Eider (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Velvet scoter (W)																		
Common scoter (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Red-breasted merganser (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Red-throated diver (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Black-throated diver (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great northern diver (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Storm petrel (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Leach's storm petrel (P)																		
Fulmar (B)	×b	×b	×b	ХC	Хc	ХC	×d	×d	×d	×е	×е	×е	√f	√f	√f	√f	√f	√f
Manx shearwater (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Balearic shearwater (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great crested grebe (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Slavonian grebe (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Black-necked grebe (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Spoonbill (W)																		
Little egret (W)																		
Gannet (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Shag (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Cormorant (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Honey buzzard (W)																		
Hen harrier (W)																		
Avocet (W)																		
Purple sandpiper (W)																		
Common sandpiper (W)																		
Kittiwake (B)	×b	×b	×b	×c	×c	Хc	×d	×d	×d	×е	Хe	×e	√f	√f	√f	√f	√f	√f
Sabine's gull (P)																		
Little gull (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Mediterranean gull (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great black-backed gull (B)	×b	×b	×b	×c	Хc	Хc	×d	×d	×d	Хe	Хe	×e	√f	√f	√f	√f	√f	√f
Herring gull (B)	×b	×b	×b	×c	ХC	×c	×d	×d	×d	×е	×e	×e	√f	√f	√f	√f	√f	√f
Lesser black-backed gull (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	Хa

PINS Ref.: EN020022 Document Ref: HRA Report: Appendix 1 Screening and Integrity Matrices **AQUIND Limited** 

<b>Distance to Proposed Deve</b>	lopment: 3	80.6 kn	1															
					Likely	Effect	ts of th	ne Proj	posed	Devel	opmen	t (In C	ombin	ation)				
European site feature		turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	D C O D C O D C O D													0	D
Gull-billed tern (P)																		
Sandwich tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Little tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Arctic tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great skua (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Pomarine skua (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Arctic skua (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	Хa
Guillemot (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Razorbill (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Short-eared owl (W)																		
Merlin (W)																		
Peregrine (B)																		
Woodlark (W)																		

- a. There is no pathway for marine works to impact these features due to distance (Thaxter et al. 2012) (HRA Report (APP-491, Rev 006) Section 6.2.5, Table 6.6).
- **b.** Given that these features are not considered to be vulnerable to disturbance from vessel traffic and associated activities, the potential for an effect from displacement is considered to be negligible across all development phases. Therefore, no LSE applies to disturbance & displacement for these features (HRA Report (APP-491, Rev 006) Section 8.2.4).
- c. Change in prey availability and behaviour resulting from marine works across all development phases has not been identified as likely to occur at a scale as to affect these features. Given the short term and temporary nature of any effect and the assessment of fish and benthic ecology, the potential for an effect is considered negligible. Therefore, no LSE applies to indirect effects (HRA Report (APP-491, Rev 006) Section 8.2.4).
- d. Structures or devices which have the potential to pose an above water collision risk to these features will not be introduced during any development phase. Surface feeding species are not considered to be vulnerable to below water collisions. The potential for an effect is therefore considered negligible and therefore no LSE applies to collision (HRA Report (APP-491, Rev 006) Section 8.2.4).
- e. There is no pathway for marine works to introduce invasive non-indigenous predators (e.g. mink) to breeding colonies for these features and therefore no LSE applies to INIS (HRA Report (APP-491, Rev 006) Section 8.2.4).
- f. LSE applies to the Proposed Development alone. (HRA Report (APP-491, Rev 006) Sections 8.2.4 and 9.1.5, Table 9.1). Therefore, potential in combination adverse effects on site integrity are considered in the Stage 2 Integrity matrices below (See HRA Integrity Matrix 6A and 6B).

# HRA Screening Matrix 11: Dungeness, Romney Marsh and Rye Bay SPA (Pre-screened out for Marine Ornithology)

<b>Distance to Proposed Development</b>	:: 61.0 kn	n																
				Likel	y Effe	cts of t	he Pro	posed	d Deve	lopme	nt ( <u>Alo</u>	ne and	d In Co	ombina	ation)			
European site feature	ı	turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Bewick's swan (W)																		
Shoveler (W)																		
Bittern (W)																		
Marsh harrier (W)																		
Hen harrier (W)																		
Avocet (B)																		
Golden plover (W)																		
Ruff (W)																		
Mediterranean gull (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Sandwich tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Little tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Aquatic warbler (W)																		
Supporting habitat (water column)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a

### **Evidence supporting conclusions:**

a. There is no pathway for marine works to impact this European site due to distance. It is situated outside the maximum foraging range of all breeding ornithological features (common tern 30 km; Sandwich tern 54 km; Mediterranean gull 20 km; Thaxter et al. 2012) (HRA Report (APP-491, Rev 006) Section 6.2.5, Table 6.6).

# HRA Screening Matrix 12: Poole Harbour SPA (Pre-screened out for Marine Ornithology)

Name of European Site: Poole Har		`	rine Or	nithol	ogy)													
Distance to Proposed Developmen	t: 63.8 k	m																
				Likel	y Effe	cts of t	the Pro	posed	l Deve	lopme	nt (Alo	ne and	d In Co	mbina	ation)			
European site feature		turban placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Bewick's swan (W)																		
Shoveler (W)																		
Bittern (W)																		
Marsh harrier (W)																		

<b>Distance to Proposed Developmen</b>	t: 63.8 k	m																
				Likel	y Effe	cts of t	he Pro	posed	Deve	lopme	nt ( <u>Alc</u>	ne and	d In Co	mbina	ation)			
European site feature		turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Hen harrier (W)																		
Avocet (B)																		
Golden plover (W)																		
Ruff (W)																		
Mediterranean gull (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Sandwich tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (B)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Aquatic warbler (W)																		
Supporting habitat (water column)	×a	Хa	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	Хa

a. There is no pathway for marine works to impact this European site due to distance. It is situated outside the mean-maximum foraging range of all breeding ornithological features (common tern 30 km; Sandwich tern 54 km; Mediterranean gull 20 km; Thaxter et al. 2012) (HRA Report (APP-491, Rev 006) Section 6.2.5, Table 6.6).

# HRA Screening Matrix 13: Estuaire et Marais de la Basse Seine SPA (Pre-screened out for Marine Ornithology)

<b>Distance to Proposed Development</b>	: 86.9 km																	
				Likel	y Effec	cts of t	he Pro	posed	<b>Deve</b>	lopme	nt ( <u>Alc</u>	ne an	d In Co	mbina	tion)			
European site feature		turband placem		Indi	ect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Brent goose (W)																		
Greylag goose (W)																		
White-fronted goose (W)																		
Shelduck (B)																		
Garganey (B)																		
Shoveler (W)																		
Gadwall (W)																		
Wigeon (W)																		
Pintail (B)																		
Teal (B)																		
Red-crested pochard (W)																		
Pochard (W)																		

Distance to Proposed Developmen	t: 86.9 km																	
				Likel	y Effe	cts of t	he Pro	posed	d Deve	lopme	nt ( <u>Alc</u>	ne and	d In Co	mbina	ation)			
European site feature		turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Tufted duck (W)																		
Scaup (P)																		
Eider (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Velvet scoter (W)																		
Common scoter (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Goldeneye (B)																		
Smew (W)																		
Goosander (W)																		
Red-breasted merganser (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Red-throated diver (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Black-throated diver (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great northern diver (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Red-necked grebe (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Great crested grebe (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Slavonian grebe (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Black stork (W)																		
White stork (B)																		
Spoonbill (W)																		
Bittern (B)																		
Little bittern (B)																		
Grey heron(W)																		
Purple heron (W)																		
Little egret (W)																		
Cormorant (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Osprey (W)																		
Honey buzzard (B)																		
Booted eagle (W)																		
Marsh harrier (B)																		
Hen harrier (B)																		
Montagu's harrier (W)																		
Red kite (W)																		
Black kite (W)																		
Corncrake (B)																		
Spotted crake (B)																		
Crane (W)																		
Oystercatcher (B)																		
Black-winged stilt (B)																		

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Distance to Proposed Developme	nt: 86.9 km																	
•				Likel	y Effe	cts of t	he Pro	posed	d Deve	lopme	nt ( <u>Alo</u>	ne an	d In Co	ombina	ation)			
European site feature	<b>I</b>	urband		Indi	rect eff	ects		Collisio	n		INIS		Δcci	dental	enille		Litter	
European site reature		olacem	1									1						
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Avocet (B)																		
Lapwing (B)																		
Golden plover (W)																		
Grey plover (W)																		
Ringed plover (B)																		
Little ringed plover (B)																		
Kentish plover (W)																		
Whimbrel (W)																		
Curlew (B)																		
Bar-tailed godwit (W)																		
Black-tailed godwit (B)																		
Turnstone (W)																		
Knot (W)																		
Ruff (W)																		
Curlew sandpiper (W)																		
Temmink's stint (W)																		
Sanderling (W)																		
Dunlin (B)																		
Little stint (W)																		
Snipe (B)																		
Common sandpiper (W)																		
Green sandpiper (W)																		
Redshank (B)																		
Wood sandpiper (W)																		
Spotted redshank (W)																		
Greenshank (W)																		
Little gull (P)	×a	×a	×a	Хa	×a	×a	×a	×a	Хa	×a	×a	×a	Хa	Хa	Хa	×a	×a	×a
Mediterranean gull (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Gull-billed tern (P)																		
Caspian tern (P)																		
Sandwich tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Common tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Arctic tern (P)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Whiskered tern (P)																		
Black tern (P)																		
Diddit tottl (1)																		

×a

Хa

×a

×a

×a

×a

Хa

×a

Хa

×a

×a

×a

Great skua (P)

Arctic skua (P)

×a

Хa

×a

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Distance to Proposed Developme	ent: 86.9 km																	
			_	Likel	y Effec	ts of t	he Pro	posec	l Deve	lopme	nt ( <u>Alo</u>	ne an	<u>d In Co</u>	ombina	ation)			
European site feature	dis	turband placem	ent		rect eff			Collisio			INIS			dental			Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Guillemot (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Razorbill (W)	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a
Little owl (W)																		
Long-eared owl (B)																		
Short-eared owl (B)																		
Nightjar (B)																		
Kingfisher (B)																		
Merlin (W)																		
Peregrine (B)																		
Red-backed shrike (B)																		
Bearded tit (B)																		
Woodlark (W)																		
Cetti's warbler (B)																		
Aquatic warbler (W)																		
Reed warbler (B)																		
Marsh warbler (B)																		
Grasshopper warbler (B)																		
Bluethroat (B)																		
Redstart (B)																		
Whinchat (B)																		
Stonechat (B)																		
Wheatear (W)																		
Tawny pipit (W)																		
Siskin (W)																		
Ortolan bunting																		
Reed bunting (B)																		

There is no pathway for marine works to impact this European site due to distance (HRA Report (APP-491, Rev 006) Section 6.2.5, Table 6.6).

# HRA Screening Matrix 14A: Estuaires et Littoral Picards (Baies de Somme et d'Authie) SAC (Fish)

Name of European site and designation: Estuaries et Littora	al Pi	carc	ls (I	Baie	de S	Som	me	et d	'Aut	thie)	SA	C (f	ish)														
EU Code: FR2200346																											
Distance to Proposed Development: 84.6 km																											
European site features										Like	ely E	Effe	cts	of th	e Propo	osed	Dev	velopn	nent	t							
Effect	Inc SS	creas SC	sed	Inj	nysic Tury	al	spe	asiv ecies	S		llutic ents		vib	oise a oratio		Dis		ance	ΕN			cha	mpei ange	rature s	on eff	ects	
Stage of Development	С	0	D	С	0	D	С	0	D	С		D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1099 River lamprey	x a	x a	x a	1		x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe					xf			x g		√ h	√ h	√ h
1166 Crested newt																											
1614 Creeping marshwort (Apium repens)																											
1903 Fen Orchid (Liparis loeselii)																											
6199 Jersey Tigar																											
1042 Yellow-spotted Whiteface (Leucorrhinia pectotalis)																											
1014 Narrow-mouthed whorl snail (Vertigo angustior)																											
1016 Desmoulin's whorl snail																											
1364 Grey seal																											
1321 Geoffroy's bat																											
1365 Common seal																											
1351 Common Porpoise																											
1349 Bottle-nosed Dolphin																											
1110 Sandbanks which are slighty covered by seawater all the																											
time																											
1130 Estuaries																											
1140 Mudflats and sandflats not covered by seawater at low																											
tide																											
1150 Coastal lagoons																											
1170 Reefs																											
1210 Annual vegetation of drift lines																											
1220 Perennial vegetation of stony banks																											
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts																											
1310 Salicornia and other annuals colonizing mud and sand																											
1330 Atlantic salt meadows (Glauco-Puccinellietalia																											
maritimae)																											
1420 Mediterranean and thermos-Atlantic halophilous scrubs																											
(Sarcocornetea fructicosi)																											

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Name of European site and designation: Estuaries et Littora	al Pic	carc	ls (E	Baie	de S	Som	me	et d'	'Aut	hie)	SA	C (fi	sh)														
EU Code: FR2200346  Distance to Proposed Development: 84.6 km																											
•										l ild	alv E	=ff_o/	oto /	of th	o Pron	acad	Do	volopn	non								
European site features										LIK	ery c	inec	cis (	ווו וכ	e Prop	osea	Dev	velopi	nen	ι					_		
Effect	Inc SS	reas C	sed		ysica ury	al		asiv ecies			llutic ents			ise a ratio			sual sturb	ance	Ελ	ΛF			mpe ange	rature s	on	mbin ects	ati
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
2130 Embryonic shifting dunes																											
2120 Shifting dunes along the shoreline with Ammophila arenaria ('white dunes')																											
2130 Fixed coastal dunes with herbacceous vegetation ('grey dunes')																											
2160 Dunes with Hippophae rhamnoides																											
2170 Dunes with Salix repens ssp argentea (Salicion arenariae)																											
2180 Wooded dunes of the Atlantic, Continental and Boreal region																											
2190 Humid dune slacks																											
3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)																											
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp																											
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation																											
3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation																											
6410 Molinia meadows on calcareous, peaty or clayey-silt- laden soils (Molinion caeruleae)																											
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels																											
6510 Lowland hay meadows (Alopecurus prtensis, Sanguisorba officinalis)																											
7230 Alkine fens																											
91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)																											

- a. River lamprey (and transformers) are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through of navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- b. River lamprey are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).

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- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm river lamprey given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- d. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.6 and 9.1, and Integrity Matrix 14 below).
- e. River lamprey are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- f. River lamprey use both the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.7).
- g. River lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.6).
- h. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on river lamprey with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination (HRA Report (APP-491, Rev 006) Sections 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 13 below).

# HRA Screening Matrix 14B: Estuaires et littoral picards (baies de Somme et d'Authie) SAC (Marine Mammals)

Name of European site and designation: Estuaires et li	ttoral	oicards (	(baies o	de Son	nme et	d'Authi	e) SAC (	(Marine	Mamn	nals)								
EU Code: FR2200346																		
Distance to Proposed Development: 87 km																		
European site features <sup>†</sup>							Likely	<b>Effects</b>	of the	Propo	sed Dev	elopm	ent					
Effect	Au	ditory inj	ury	Di	isturbar	ice		Collision		Indi	rect effe	cts		Pollution	)	In con	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1364 Grey seal	×a	×a	×a	×b	×b	×b	×c	×c	Хc	×d	×d	×d	√e	√e	√e	√f	√f	√f
1365 Harbour seal	×a	×a	×a	×b	×b	×b	×c	×c	Хc	×d	×d	×d	√e	√e	√e	√f	√f	√f
1614 Apium repens																		
6199 Euplagia quadripunctaria																		
1099 Lampetra fluviatilis																		
1042 Leucorrhinia pectoralis																		
1903 Liparis loeselii																		
1321 Myotis emarginatus																		
1166 Triturus cristatus																		
1014 Vertigo angustior																		
1016 Vertigo moulinsiana																		
1110 Sandbanks which are slightly covered by sea water																		
all the time																		
1130 Estuaries																		
1140 Mudflats and sandflats not covered by seawater at																		
low tide																		
1150 Coastal lagoons																		
1170 Reefs																		

<sup>&</sup>lt;sup>†</sup> As per https://eunis.eea.europa.eu/sites/FR2200346 [accessed 11/06/2019]

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Name of European site and designation: Estuaires et I	ittoral	picards (	(baies	de Som	me et	d'Authi	e) SAC	Marine	Mamm	nals)								
EU Code: FR2200346																		
Distance to Proposed Development: 87 km																		
European site features <sup>†</sup>							Likely	Effects	of the	Propo	sed Dev	elopn	nent					
Effect	Au	ditory inj	ury	Di	sturbar	се	(	Collision		Ind	irect effe	cts		Pollution	)	In com	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1210 Annual vegetation of drift lines																		
1220 Perennial vegetation of stony banks																		
1230 Vegetated sea cliffs of the Atlantic and Baltic																		
Coasts																		
1310 Salicornia and other annuals colonizing mud and																		
sand																		
1330 Atlantic salt meadows (Glauco-Puccinellietalia																		
maritimae)																		
1420 Mediterranean and thermo-Atlantic halophilous																		
scrubs (Sarcocornetea fruticosi)																		
2110 Embryonic shifting dunes																		
2120 Shifting dunes along the shoreline with Ammophila																		
arenaria ("white dunes")																		
2130 Fixed coastal dunes with herbaceous vegetation																		
("grey dunes")																		
2160 Dunes with Hippophaë rhamnoides																		
2170 Dunes with Salix repens ssp. argentea (Salicion																		
arenariae)																		
2180 Wooded dunes of the Atlantic, Continental and																		
Boreal region																		
2190 Humid dune slacks																		
3110 Oligotrophic waters containing very few minerals of																		
sandy plains (Littorelletalia uniflorae)																		
3140 Hard oligo-mesotrophic waters with benthic																		
vegetation of Chara spp.																		
3150 Natural eutrophic lakes with Magnopotamion or																		
Hydrocharition - type vegetation																		
3260 Water courses of plain to montane levels with the																		
Ranunculion fluitantis and Callitricho-Batrachion																		
vegetation																		
6410 Molinia meadows on calcareous, peaty or clayey-																		
silt-laden soils (Molinion caeruleae)																		
6430 Hydrophilous tall herb fringe communities of plains																		
and of the montane to alpine levels																		
6510 Lowland hay meadows (Alopecurus pratensis,																		
Sanguisorba officinalis)																		
7230 Alkaline fens																		
91E0 Alluvial forests with Alnus glutinosa and Fraxinus																		
excelsior (Alno-Padion, Alnion incanae, Salicion albae)																		

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- a. Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- b. Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (87 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- **c.** Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore, no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- d. Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short-term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Table 7.8 and 9.1, and Integrity Matrix 17 below).
- f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either bottlenose dolphin, harbour porpoise, grey seal or harbour seal which are qualifying features of the Estuaires et littoral picards (baies de Somme et d'Authie) SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Estuaires et littoral picards (baies de Somme et d'Authie) SAC can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Section 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 17 below).

# HRA Screening Matrix 15A: Baie de Canche et Couloir des trois Estuaires SAC (Fish)

Name of European site and designation: Baie de Canche	et Co	ouloi	ir de	s tr	ois I	Estu	aire	s SA	AC																		
EU Code: FR3102005																											
Distance to Proposed Development: 86.5 km																											
European site features											Like	ely E	ffec	cts o	f the F	ropo	sec	l Deve	elopi	men	ıt						
Effect	Inc SS	creas SC	sed	1	ysic ury	al		asiv ecies		1	lluti ents			oise a oratio		Vis Dis		ance	ΕN	1F			mpel ange	rature s		comi ects	bination
Stage of Development	С	0	D	С	0	D	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1102 Allis shad	x a	x a	x a	x b	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe	xf	xf	xf		x g			x h		i	✓ i	√i
1095 Sea lamprey	x a	x a	x a	x b	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe					x g			x h		i	<u>-</u>	√i
1099 River lamprey	x a	x a	x a	x b	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe					x g			x h		i	√ i	√i

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Name of European site and designation: Baie de Canche e	t Co	uloi	r de	s tro	ois I	Estu	aire	s SA	AC.																		
EU Code: FR3102005																											
Distance to Proposed Development: 86.5 km																											
European site features										ı	_ike	ly E	ffec	ts o	f the P	ropo	sec	l Deve	lopi	men	ıt						
Effect	Inc SS	creas SC	sed	Ph Inju	ysic ury	al		asiv			llutic ents			oise a		1	ual turb	ance	ΕN	1F			mpe ange	rature es		comb ects	oination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1106 Atlantic salmon	x a	x a	x a	x b	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	хе	xf	xf	xf		x g			x h		l√	√ i	√i
1351 Harbour porpoise																											
1364 Grey seal																											
1365 Harbour seal																											
1351 Common Porpoise																											
1110 Sandbanks which are slightly covered by sea water all the time																											
1130 Estuaries																											
1140 Mudflats and sandflats not covered by seawater at low tide																											
1210 Annual vegetation of drift lines																											
1310 Salicornia and other annuals colonising mud and sand																											
1330 Atlantic salt meadows																											

- **a.** Allis shad, sea lamprey (and transformers), river lamprey (and transformers) and salmon (and smolts) are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through of navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- **b.** Allis shad, sea lamprey, river lamprey and salmon are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm allis shad, sea lamprey, river lamprey and salmon given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2 and 7.4 and 7.6).
- **d.** Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Section 7.2.2 and 9.1.3, Tables 7.2, 7.4, 7.6 and 9.1, and Integrity Matrix 14 below).
- e. Allis shad are hearing specialists due to the coupling of the ear with the swim bladder. Although TTS may occur if an individual is within 160m of trenching equipment it is considered as this species is highly mobile and generally pelagic that they will move away before an impact occurs. River lamprey, sea lamprey and salmon are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- f. Allis shad and salmon will be accustomed to vessels traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- g. Salmon and allis shad are pelagic and generally use the zone close to the sea surface for migration so will not to come into contact with EMF during operation of the Proposed Development. In addition, salmon show a lack of behavioural response to EMF and shad do not poses ampullary organs instead relying on sight or sensory organs to locate prey. River and sea lamprey use both

- the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3, 7.5 and 7.7).
- h. Allis shad and salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with any temperature changes during operation of the Proposed Development. Sea lamprey and river lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3, 7.5, 7.6 and 7.7).
- i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on allis shad, sea lamprey, river lamprey and salmon with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination (HRA Report (APP-491, Rev 006) Section 8.2.2, Table 9.1 and Integrity Matrix 14 below).

# HRA Screening Matrix 15B: Baie de Canche et couloir des trois estuaires SAC (Marine Mammals)

Name of European site and desi	ignation.	Daic ac v	Janone C	Coulon	acs trois	Cottaine	3 OAO (II	nariiic ivic	ai3)									
Distance to Proposed Developm	nent: 85 k	rm																
European site features <sup>‡</sup>	10111. 00 1	WIII					Likely	Effects of	the Pro	posed D	evelopme	nt						
Effect	Au	ditory inju	iry	Di	isturbance	9		Collision		•	direct effec			Pollution		ln d	combina: effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	×c	ХC	ХC	×d	×d	×d	√e	√e	√e	√f	√f	√f
1364 Grey seal	×a	×a	×a	×b	×b	×b	ХC	ХC	ХC	×d	×d	×d	√e	√e	√e	√f	√f	√f
1365 Harbour seal	×a	×a	×a	×b	×b	×b	×c	×c	ХC	×d	×d	×d	√e	√e	√e	√f	√f	√f
1095 Sea lamprey																		
1099 River lamprey																		
1102 Allis shad																		
1106 Atlantic salmon																		
1110 Sandbanks which are																		
slightly covered by sea water all																		
the time																		
1130 Estuaries																		
1140 Mudflats and sandflats not																		
covered by seawater at low tide																		
1210 Annual vegetation of drift																		
lines																		
1310 Salicornia and other																		
annuals colonising mud and																		
sand																		
1330 Atlantic salt meadows																		

#### **Evidence supporting conclusions:**

- **a.** Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- **b.** Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise

WSP/Natural Power

PINS Ref.: EN020022

Document Ref: HRA Report: Appendix 1 Screening and Integrity Matrices

<sup>&</sup>lt;sup>‡</sup> As per https://inpn.mnhn.fr/docs/natura2000/fsdpdf/FR3102005.pdf [accessed 05/06/2019]

from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (85 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).

- c. Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore, no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- d. Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short-term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore, LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Table 7.8 and 9.1, and Integrity Matrix 18 below).
- f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either harbour porpoise, grey seal or harbour seal which are qualifying features of the Baie de Canche et couloir des trois estuaires SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Baie de Canche et couloir des trois estuaires SAC can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Sections 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 18 below).

# HRA Screening Matrix 16A: Baie de Seine Orientale SAC (Fish)

Name of European site and designation:	Baie de Seine Oriei	ntal	e SA	C (f	ish)																						
EU Code: FR2502021																											
<b>Distance to Proposed Development: 90.9</b>	km																										
European site features											Like	ely E	Effe	cts o	of the P	ropo	sed	Deve	lopr	nen	t						
Effect		crea SC	ased	- 1	hysic jury	al	1	asiv ecies			llutio ents		1	ise a	and on		sual sturb	ance	EΛ	ΛF			mpei ange	rature s		coml ects	bination
Stage of Development	С	· C	) D	С	To	D	Ċ	0	D	С	0	D	С	0	D	С	0	D	С	0	D	_	0	D	С	0	D
1102 Allis shad	x			1 -	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe	xf	xf	xf		x g			x h		<u>-</u>	√ i	√i
1103 Twaite shad	x	- 1		1 -	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe	xf	xf	xf		x g			x h		√ i	√ i	√i
1095 Sea lamprey	x		- 1	1 -	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe					x g			x h		√ i	√ i	√i
1099 River lamprey	x			1 -	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe					x g			x h		√ i	√ i	√i
1106 Atlantic salmon	x			Ι.	x b	x b	X C	X C	X C	√ d	√ d	√ d	x e	x e	xe	xf	xf	xf		x g			x h		√ i	√ i	√i
1351 Harbour porpoise																				Ĭ							
1364 Grey seal																											
1365 Harbour seal																											

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Name of European site and designation: Baie de Seine Of EU Code: FR2502021 Distance to Proposed Development: 90.9 km	rient	ale	SAC	(fis	sh)																						
European site features											Like	ly E	ffec	ts c	of the P	ropo	sed	Deve	opn	nent	ŧ						
Effect	Inc SS	reas C	sed	Phy Inju		a/	Inva	asive cies	- 1	Pol	llutio ents	n	Noi		and on	1	ual turb	ance	ΕN	1F			mpe ange	rature s		comi ects	bination
Stage of Development	С	0	D	С	0	D	Ċ	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin																											
1110 Sandbanks which are slightly covered by sea water all the time																											
1160 Large shallow inlets and bays																											
1170 Reefs																											

#### Evidence supporting conclusions (also see HRA Report Section 7.2.2 and 8.2.2):

- **a.** Twaite shad, allis shad, sea lamprey (and transformers), river lamprey (and transformers) and salmon (and smolts) are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through or navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- **b.** Twaite shad, allis shad, sea lamprey, river lamprey and salmon are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm twaite shad, allis shad, sea lamprey, river lamprey and salmon given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2 and 7.4 and 7.6).
- **d.** Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.2, 7.4, 7.6 and 9.1, and Integrity Matrix 15below).
- e. Twaite and allis shad are hearing specialists due to the coupling of the ear with the swim bladder. Although TTS may occur if an individual is within 160 m of trenching equipment it is considered as this species is highly mobile and generally pelagic that they will move away before an impact occurs. River lamprey, sea lamprey and salmon are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- f. Twaite shad, allis shad and salmon will be accustomed to vessel traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- g. Twaite shad, allis shad and salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with EMF during operation of the Proposed Development. In addition, salmon show a lack of behavioural response to EMF and shad do not possess ampullary organs instead relying on sight or sensory organs to locate prey. River and sea lamprey use both the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3, 7.5 and 7.7).
- h. Twaite shad, allis shad and salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with any temperature changes during operation of the Proposed Development. Sea lamprey and river lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3, 7.5 and 7.7).
- i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on twaite shad, allis shad, sea lamprey, river lamprey and salmon with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination (HRA Report (APP-491, Rev 006) Section 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 15 below).

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# HRA Screening Matrix 16B: Baie de Seine Orientale SAC (Marine Mammals)

Name of European site and designat	ion: Baie	de Seine	Oriental	e SAC (M	arine Mai	mmals)												
EU Code: FR2502021	ion. Daic	uc ocinic	Official	III) OAO O	arme ma	iiiiiaioj												
Distance to Proposed Development:	91 km																	
European site features§							Likely E	ffects of	the Pro	posed De	velopmer	nt						
Effect	Αι	uditory inj	ury		Disturban	се		Collision		•	ndirect effe			Pollution		In c	ombina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1364 Grey seal	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1365 Harbour seal	×a	×a	×a	×b	×b	×b	×c	×c	Хc	×d	×d	×d	√e	√e	√e	√f	√f	√f
1095 Sea lamprey																		
1099 River lamprey																		
1102 Allis shad																		
1103 Twaite shad																		
1106 Atlantic salmon																		
1110 Sandbanks which are slightly																		
covered by sea water all the time																		
1160 Large shallow inlets and bays																		

### **Evidence supporting conclusions:**

1170 Reefs

- **a.** Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- b. Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (91 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- c. Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore, no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- d. Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short-term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore, LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Tables 7.8 and 9.1, and Integrity Matrix 19 below).

<sup>§</sup> As per https://inpn.mnhn.fr/docs/natura2000/fsdpdf/FR2502021.pdf [accessed 02/06/2019]

f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either bottlenose dolphin, harbour porpoise, grey seal or harbour seal which are qualifying features of the Baie de Seine Orientale SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Baie de Seine Orientale SAC can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Sections 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 19 below).

# HRA Screening Matrix 17A: Littoral Cauchois SAC (Fish)

Name of European site and designation: Littoral Cauchois	SA	C (fi	sh)																								
EU Code: FR2300139																											
Distance to Proposed Development: 52.7 km																											
European site features										Lik	ely	Effe	ects	of th	e Prop	ose	d D	eve	lopi	men	t						
Effect	Inc SS	creas SC	sed	Ph <sub>.</sub> Inji	ysica ıry	al	l .	asiv ecies		1	olluti ents			oise bratio			sual sturk	ban	E	ИF			empe ange	rature s		mbir ects	nation
Stage of Development	С	0	D	С		D	С	0		С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1103 Twaite shad	x a	x a	x a	X b	X b	X b	×	X C	С	√ d	√ d	√ d	_	е	×e	X f	X f	X f		x g			X h		i	i	√i
1099 River lamprey	x a	x a	x a	X b	X b	X b	X C	X C		√ d	√ d	√ d	× e	е	×e					X g			X h		√ i	i	√i
1095 Sea lamprey	x a	x a	x a	X b	X b	X b	×	X C		√ d	√ d	√ d	× e	1	×e					x g			X h		i	i	√i
1166 Crested newt																											
1163 Freshwater sculpin)																											
1044 Southern coenagrion																											
6199 Jersey tiger																											
1083 Stag beatle (Lucanus cervus)																											
1308 Barbastelle																											
1364 Grey seal																											
1323 Bechsteins bat																											
1321 Geoffroy's bat																											
1324 Greater mouse-eared bat																											
1365 Harbour seal																											
1351 Common Porpoise																											
1304 Greater horseshoe bat (Rhinolophus ferrumequinum)																											
1303 Lesser horseshoe bat (Rhinolophus hipposideros)																											
1349 Bottle-nosed Dolphin																											
1170 Reefs																											
1220 Perennial vegetation of stony banks																											

**AQUIND Limited** 

EU Code: FR2300139																										
Distance to Proposed Development: 52.7 km																										
European site features									Lik	ely Ef	fec	ts o	f the	e Proj	pose	d De	evel	opm	ent	t						
Effect	Inc SS	reas	sed	Ph <u>j</u> Inju	ysica ıry	ıl	Inva spec		- 1	llution ents			ise a ratio			ual turb	an	EM	1F			empe ange	rature es		mbir ects	ation
Stage of Development	С	0	D	С	0	D	С	0 D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts																										
3110 Oligatrophic waters containing very few minerals of sandy plains (littorelletalia uniflorae)																										
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp																										
3150 Natural eutrophic lakes and Magnopotamion or Hydrocharition – type vegetation																										
1020 Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix																										
4030 European dry heaths																										
6410 Molina meadows on calcareous, peaty or clayey-silt- aden soils (Molinion caeruleae)																										
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels																										
6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)																										
7220 Petrifying springs with tufa formation (Cratoneurion)																										
7230 Alkaline fens					$\vdash$			+	+	$\vdash$	-	-	-							-	+	+-		-		
3310 Caves not open to the public											$\dashv$															
9120 Atlantic acidophilous beech forests with llex and sometimes also Taxus in shrublayer (Quercion robori-																										
petraeae or Ilici-fagenion)											$\dashv$															
9130 Asperulo-Fagetum beech forests																										
9180 Tilio-Acerion forests of slopes, screes and ravines 9190 Old acidophilous oak woods with Quercus rubur on																										
sandy plains 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)																										

**a.** Twaite shad, river lamprey (and transformers) and sea lamprey (and transformers) are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through of navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.4 and 7.6).

- **b.** Twaite shad, river lamprey and sea lamprey are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.4 and 7.6).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm twaite shad, river lamprey and sea lamprey given that there is no evidence to suggest that these types of species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.4 and 7.6).
- d. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3, Tables 7.4, 7.6 and 9.1, and Integrity Matrix 16 below).
- e. Twaite shad are hearing specialists due to the coupling of the ear with the swim bladder. Although TTS may occur if an individual is within 160m of trenching equipment it is considered as this species is highly mobile and generally pelagic that they will move away before an impact occurs. Both river and sea lamprey are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.4 and 7.6).
- f. Twaite shad will be accustomed to vessels traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.4 and 7.6).
- **g.** Twaite shad are generally pelagic so will not come into contact with EMF during operation of the Proposed Development. In addition, shad do not possess ampullary organs instead relying on sight or sensory organs to locate prey. Both river and sea lamprey use both the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.5 and 7.7).
- h. Twaite shad are generally pelagic so will not come into contact with any temperature changes during operation of the Proposed Development. Sea lamprey and river lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.5 and 7.7).
- i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on twaite shad, river lamprey and sea lamprey with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination. No LSE was concluded for both of these effects in combination with other projects (HRA Report (APP-491, Rev 006) Sections 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 16 below).

# HRA Screening Matrix 17B: Littoral Cauchois SAC (Marine Mammals)

×a

×a

×a

×a

Хa

×a

Хb

Хb

Хb

Χb

Name of European site and designation	on: Littoral Cauchois	SAC (	Marine	Mamma	ls)													
EU Code: FR2300139																		
Distance to NSIP: 53 km																		
European site features**							Likely	Effec	ts of the	Propo	sed De	velopm	ent					1
Effect	Au	ditory ir	njury	Di	isturband	се	(	Collisio	on	Inc	direct et	fects		Pollutio	on	In com	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	×c	Хc	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f

Xb

Xb

ХC

ХC

ХC

ХC

ХC

ХC

×d

×d

×d

×d

×d

×d

√e

√e

√e

√e

√e

√e

AQUIND INTERCONNECTOR

**AQUIND Limited** 

1308 Barbastella barbastellus 1044 Coenagrion mercurial

1364 Grey seal

1365 Harbour seal

1103 Alosa fallax

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√f

√f

√f

√f

√f

√f

PINS Ref.: EN020022

<sup>\*\*</sup> As per https://eunis.eea.europa.eu/sites/FR2300139 [accessed 11/06/2019]

Name of European site and designation: Littoral Cauchois SAC (Marine Mammals)

EU Code: FR2300139

Distance to NSIP: 53 km

European site features**							Likely	Effect	ts of the	Propo	sed De	velopm	ent					
Effect	Au	ditory in	jury	Di	sturban	ce	(	Collisio	n	Inc	direct ef	fects		Pollutio	on	In com	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1163 Cottus gobio																		
6199 Euplagia quadripunctaria																		
1099 Lampetra fluviatilis																		
1083 Lucanus cervus																		
1323 Myotis bechsteinii																		
1321 Myotis emarginatus																		
1324 Myotis myotis																		
1095 Petromyzon marinus																		
1304 Rhinolophus ferrumequinum																		
1303 Rhinolophus hipposideros																		
1166 Triturus cristatus																		
1170 Reefs																		
1220 Perennial vegetation of stony banks																		
1230 Vegetated sea cliffs of the Atlantic and Baltic																		
Coasts																		
3110 Oligotrophic waters containing very few minerals																		
of sandy plains (Littorelletalia uniflorae)																		
3140 Hard oligo-mesotrophic waters with benthic																		
vegetation of Chara spp.																		
3150 Natural eutrophic lakes with Magnopotamion or																		
Hydrocharition - type vegetation																		
4020 Temperate Atlantic wet heaths with Erica ciliaris																		
and Erica tetralix																		
4030 European dry heaths																		
6410 Molinia meadows on calcareous, peaty or																		
clayey-silt-laden soils (Molinion caeruleae)																		
6430 Hydrophilous tall herb fringe communities of																		
plains and of the montane to alpine levels																		
6510 Lowland hay meadows (Alopecurus pratensis,																		
Sanguisorba officinalis)																		
7220 Petrifying springs with tufa formation																		
(Cratoneurion)																		
7230 Alkaline fens																		
8310 Caves not open to the public																		

PINS Ref.: EN020022 Document Ref: HRA Report: Appendix 1 Screening and Integrity Matrices

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Name of European site and designation: Littoral Ca	uchois	SAC (I	Marine	Mamma	ls)													
EU Code: FR2300139																		
Distance to NSIP: 53 km																		
European site features**							Likely	Effect	s of the	Propo	sed De	velopm	ent					
Effect	Au	ditory in	jury	D	isturband	е	(	Collisio	n	Inc	direct ef	fects		Pollutio	n	In com	bination e	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
9120 Atlantic acidophilous beech forests with Ilex and																		
sometimes also Taxus in the shrublayer (Quercion																		
robori-petraeae or Ilici-Fagenion)																		
9130 Asperulo-Fagetum beech forests																		
9180 Tilio-Acerion forests of slopes, screes and																		
ravines																		
9190 Old acidophilous oak woods with Quercus robur																		
on sandy plains																		
91E0 Alluvial forests with Alnus glutinosa and																		
Fraxinus excelsior (Alno-Padion, Alnion incanae,																		
Salicion albae)																		

- **a.** Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- b. Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (53 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- c. Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore, no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- **d.** Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short-term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3 Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore, LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Tables 7.8 and 9.1, and Integrity Matrix 20 below).
- f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either bottlenose dolphin, harbour porpoise, grey seal or harbour seal which are qualifying features of the Littoral Cauchois SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Littoral Cauchois SAC

can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Sections 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 20 below).

# HRA Screening Matrix 18: Récifs Gris-Nez Blanc-Nez SAC (Marine Mammals)

Name of European s	site and de	esignatio	n: Récifs	Gris-Nez	Blanc-Ne	z SAC (M	arine Mai	mmals)										
EU Code: FR310200																		
Distance to Propose	ed Develo	oment: 10	)4 km															
European site features <sup>††</sup>							Lik	ely Effect	s of the P	roposed	Developn	nent						
Effect	A	uditory inju	ıry	l l	Disturband	е		Collision		In	direct effe	cts		Pollution		In cor	mbination (	effects
Stage of	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Development 1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1364 Grey seal	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1365 Harbour seal	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1110 Sandbanks which are slightly covered by sea water all the time																		
1170 Reefs																		

# **Evidence supporting conclusions ():**

- **a.** Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- b. Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (104 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- c. Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore, no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- d. Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore, LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Tables 7.8 and 9.1, and Integrity Matrix 21 below).
- f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either harbour porpoise, grey seal or harbour seal which are qualifying features of the Récifs Gris-Nez Blanc-Nez SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory

<sup>&</sup>lt;sup>††</sup> As per https://inpn.mnhn.fr/docs/natura2000/fsdpdf/FR3102003.pdf [accessed 05/06/2019]

injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Récifs Gris-Nez Blanc-Nez SAC can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Sections 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 21 below).

# HRA Screening Matrix 19: Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC (Marine Mammals)

Name of European s	ite and de	esignatio	n: Ridens	et dunes	hydrauli	ques du c	détroit du	Pas-de-C	alais SA	C (Marine	Mammal	s)						
EU Code: FR3102004	4																	
<b>Distance to Propose</b>	d Develop	oment: 59	) km															
European site features <sup>‡‡</sup>							Lik	ely Effect	s of the P	roposed	Developn	nent						
Effect	A	uditory inju	ury	l l	Disturband	е		Collision		In	direct effe	ects		Pollution		In cor	nbination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1364 Grey seal	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1365 Harbour seal	×a	×a	×a	×b	×b	×b	×c	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1110 Sandbanks																		
which are slightly																		
covered by sea																		
water all the time																		
1170 Reefs																		

#### **Evidence supporting conclusions:**

- **a.** Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- b. Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (59 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- c. Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore, no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- d. Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore, LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Tables 7.8 and 9.1, and Integrity Matrix 22 below).

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<sup>#</sup> As per https://inpn.mnhn.fr/docs/natura2000/fsdpdf/FR3102004.pdf [accessed 05/06/2019]

f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either harbour porpoise, grey seal or harbour seal which are qualifying features of the Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Sections 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 22 below).

# HRA Screening Matrix 20: Estuaire de la Seine SAC (Marine Mammals)

Name of European site and designation: Estuaire de la Sei	ne SAC	(Marin	e Man	nmals)														
EU Code: FR2300121		•																
Distance to NSIP: 90 km																		
European site features§§							Lil	kely Eff	ects of	the Pro	posed	Devel	opmei	nt				
Effect	Au	ditory ii	njury	Dis	sturban	се		Collisio			irect eff			Pollut	ion	In con	nbination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1351 Harbour porpoise	×a	×a	×a	×b	×b	×b	Хc	Хc	Хc	×d	×d	×d	√e	√e	√e	√f	√f	√f
1364 Grey seal	×a	×a	×a	×b	×b	×b	Хc	×c	Хc	×d	×d	×d	√e	√e	√e	√f	√f	√f
1365 Harbour seal	×a	×a	×a	×b	×b	×b	Хc	×c	×c	×d	×d	×d	√e	√e	√e	√f	√f	√f
1044 Southern damselfly																		
1065 Marsh fritillary butterfly																		
1083 Stag beetle																		
1095 Sea lamprey																		
1096 Brook lamprey																		
1099 River lamprey																		
1103 Twaite shad																		
1106 Atlantic salmon																		
1166 Great crested newt																		
1304 Greater horseshoe bat																		
1308 Barbastelle																		
1324 Greater mouse-eared bat																		
5315 Bullhead																		
6199 Jersey tiger																		
1110 Sandbanks which are slightly covered by sea water all																		
the time																		
1130 Estuaries																		
1140 Mudflats and sandflats not covered by seawater at low																		
tide																		
1170 Reefs																		
1210 Annual vegetation of drift lines																		
1220 Perennial vegetation of stony banks																		
1310 Salicornia and other annuals colonizing mud and sand																		
1330 Atlantic salt meadows																		

<sup>§§</sup> As per https://inpn.mnhn.fr/docs/natura2000/fsdpdf/FR2300121.pdf [accessed 02/06/2019]

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PINS Ref.: EN020022

Document Ref: HRA Report: Appendix 1 Screening and Integrity Matrices

Name of European site and designation: Estuaire de la Seine	SAC	(Marin	e Mam	mals)														
EU Code: FR2300121				•														
Distance to NSIP: 90 km																		
European site features <sup>§§</sup>							Lil	kely Eff	ects of	the Pro	posed	Devel	opme	nt				
Effect	Au	ditory ir	njury	Dis	sturban	ce		Collisio			irect effe			Pollut	tion	In cor	mbination	effects
Stage of Development	С	0	D	С	0	D	C	0	D	С	0	D	С	0	D	С	0	D
2110 Embryonic shifting dunes																		
2120 Shifting dunes along the shoreline with Ammophila																		
arenaria ("white dunes")																		
2130 Fixed coastal dunes with herbaceous vegetation ("grey																		
dunes")																		
2160 Dunes with Hippophae rhamnoides																		
2180 Wooded dunes of the Atlantic, Continental and Boreal																		
region																		
2190 Humid dune slacks																		
3140 Hard oligo-mesotrophic waters with benthic vegetation of																		
Chara spp.																		
3150 Natural eutrophic lakes with Magnopotamion or																		
Hydrocharition-type vegetation																		
3260 Water courses of plain to montane levels with the																		
Ranunculion fluitantis and Callitricho-Batrachion vegetation																		
6210 Semi-natural dry grasslands and scrubland facies on																		
calcareous substrates (Festuco-Brometalia)																		
6430 Hydrophilous tall herb fringe communities of plains and of																		
the montane to alpine levels																		
6510 Lowland hay meadows (Alopecurus pratensis,																		
Sanguisorba officinalis)																		
9120 Atlantic acidophilous beech forests with Ilex and																		
sometimes also Taxus in the shrublayer (Quercion robori-																		
petraeae or Ilici-Fagenion)																		
9130 Asperulo-Fagetum beech forests																		
9180 Tilio-Acerion forests of slopes, screes and ravines																		

- **a.** Given the geophysical survey and positioning equipment likely to be used, and the activities which have been proposed, there is negligible potential for the sound produced to induce the onset of auditory injury (PTS). Therefore, no LSE as a result of auditory injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- b. Although there is potential for disturbance of a very small number of individuals as a result of increased anthropogenic noise from the geophysical survey and positioning equipment likely to be used, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Disturbance ranges as a result of increased anthropogenic noise from the activities and vessels proposed are likely to be small therefore there is negligible potential for disturbance; furthermore, any effects are likely to be temporary and reversible with suitable alternative local habitat being available in the meantime. Any changes to swimming behaviour as a result of the presence of EMF (operational phase only) are likely to be corrected within a few metres and therefore have minimal effect. The potential for disturbance of seals hauled out within this SAC is considered to be nil due to the distance between the Proposed Development and the SAC (90 km). Therefore, no LSE as a result of disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- c. Given the number, type and behaviour of vessels required, and the fact that the species under consideration are small and agile, the risk of collision is considered to be negligible. Therefore no LSE as a result of collision can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).

- d. Indirect effects such as changes in suspended sediment levels as a result of trenching and dredging have the potential to affect prey availability/quality and alter marine mammal foraging behaviour/success. However, because marine mammals range widely and forage in a variety of habitats using a variety of cues, any short-term local level changes in prey availability/quality will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of indirect effects can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.3, Table 7.8).
- e. Pollution (unplanned spills/disposal of litter) may affect marine mammal species directly (if water quality is affected as a result of an unplanned spill, litter is ingested or animals become entangled in marine debris) and/or indirectly (if contaminated prey items are ingested). Therefore, LSE applies to pollution (HRA Report (APP-491, Rev 006) Sections 7.2.3 and 9.1.4, Tables 7.8 and 9.1, and Integrity Matrix 23 below).
- f. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on either harbour porpoise, grey seal or harbour seal which are qualifying features of the Estuaire de la Seine SAC with the exception of pollution. This is because there is negligible potential for the sound produced by the Proposed Development to induce the onset of auditory injury (PTS), any disturbance is likely to be temporary and reversible with suitable alternative local habitat being available in the meantime, the risk of collision with vessels is considered to be negligible, and short term local level changes in prey availability/quality as a result of indirect effects will not result in a reduction in either fitness or breeding success. Therefore, no LSE as a result of the contribution of the Proposed Development to any potential in combination effects (with the exception of pollution) on the marine mammal features of the Estuaire de la Seine SAC can be concluded. However, LSE applies in relation to pollution therefore in combination effects for pollution have been taken through to AA (HRA Report (APP-491, Rev 006) Sections 8.2.3 and 9.1.4, Table 9.1 and Integrity Matrix 23 below).

# HRA Screening Matrix 21: Estuaire de la Seine SAC (Fish)

Name of European site and designation: E	stuai	re de	la Se	ine S	SAC (I	Fish)																					
EU Code: FR2300121					-																						
Distance to NSIP: 90 km																											
European site features***											Likely	/ Effe	cts o	f the	Propo	sed D	evelop	ment									
Effect	In	creas		P	Physic	al	lr	nvasiv	/e	F	Pollutio	on	٨	loise	and		Visual	1		EMF		Ter	npera	ture		In	
		SSC			Injury	•	s	ресіє	es		event	S	١ ١	/ibrat	ion	Di.	sturbaı	псе				C	hange	es	con	nbina	tion
																										effects	S
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1103 Twaite shad	×a	×a	×a	×b	×b	×b	Хc	Хc				√d	Хe	×e	×e	×f	×f	×f		×g			×h		√i	√i	√i
1095 Sea lamprey	×a				×b					√d					×e					×g			×h		√i	√i	√i
1099 River lamprey	×a				×b								Хe	Хe	Хe					×g			×h		√i	√i	√i
1106 Atlantic salmon	×a	×a	×a	×b	×b	×b	Хc	Хc	Хc	√d	√d	√d	Хe	Хe	×e	×f	×f	×f		×g			×h		√i	√i	√i
1351 Harbour porpoise																											
1364 Grey seal																											
1365 Harbour seal																											
1044 Southern damselfly																											
1065 Marsh fritillary butterfly																											
1083 Stag beetle																											
1096 Brook lamprey																											
1166 Great crested newt																											
1304 Greater horseshoe bat																											
1308 Barbastelle																											
1324 Greater mouse-eared bat																											
5315 Bullhead																											
6199 Jersey tiger																											
1110 Sandbanks which are slightly covered																											
by sea water all the time																											

<sup>&</sup>quot;As per https://inpn.mnhn.fr/docs/natura2000/fsdpdf/FR2300121.pdf [accessed 02/06/2019]

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Name of European site and designation: E	stuai	re de	la Se	eine S	SAC (	Fish)																					
EU Code: FR2300121						-																					
Distance to NSIP: 90 km																											
European site features***											Likely	/ Effe	cts of	f the	Propo	sed D	evelop	ment									
Effect	In	creas	sed	F	Physic	al	lı	nvasi	/e		Pollutio			oise a			Visual			EMF		Ter	npera	ture		In	
		SSC			Injury		1	specie			event		1	ribrati		Di	sturbar					1	hange		com	nbinat	tion
					, . ,			,															3			effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1130 Estuaries																											
1140 Mudflats and sandflats not covered by																											
seawater at low tide																											
1170 Reefs																											
1210 Annual vegetation of drift lines																											
1220 Perennial vegetation of stony banks																											
1310 Salicornia and other annuals																											
colonizing mud and sand																											
1330 Atlantic salt meadows																											
2110 Embryonic shifting dunes																											
2120 Shifting dunes along the shoreline with																											
Ammophila arenaria ("white dunes")																											
2130 Fixed coastal dunes with herbaceous																											
vegetation ("grey dunes")																											
2160 Dunes with Hippophae rhamnoides																											
2180 Wooded dunes of the Atlantic,																											
Continental and Boreal region																											
2190 Humid dune slacks																											
3140 Hard oligo-mesotrophic waters with																											
benthic vegetation of Chara spp.																											
3150 Natural eutrophic lakes with																											
Magnopotamion or Hydrocharition-type																											
vegetation																											
3260 Water courses of plain to montane																											
levels with the Ranunculion fluitantis and																											
Callitricho-Batrachion vegetation																											
6210 Semi-natural dry grasslands and																											
scrubland facies on calcareous substrates																											
(Festuco-Brometalia)																											
6430 Hydrophilous tall herb fringe																											
communities of plains and of the montane to																											
alpine levels																											
6510 Lowland hay meadows (Alopecurus																											
pratensis, Sanguisorba officinalis)																											
9120 Atlantic acidophilous beech forests																											
with Ilex and sometimes also Taxus in the																											

PINS Ref.: EN020022
Document Ref: HRA Report: Appendix 1 Screening and Integrity Matrices

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Name of European site and designation: E	stuai	re de	la Se	eine S	SAC (I	Fish)																					
EU Code: FR2300121						-																					
Distance to NSIP: 90 km																											
European site features***											Likely	/ Effe	cts o	f the	Propo	sed De	evelop	ment									
Effect	Inc	creas SSC		F	Physic Injury			nvasiv pecie		1	ollutio		l	loise a ⁄ibrati		Dis	Visuai sturbai			EMF		1	mpera change		I	In nbinate	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
shrublayer (Quercion robori-petraeae or Ilici- Fagenion)																											
9130 Asperulo-Fagetum beech forests																											
9180 Tilio-Acerion forests of slopes, screes and ravines																											

- a. Twaite shad, sea lamprey (and transformers), river lamprey (and transformers) and salmon (and smolts) are tolerant of naturally high levels of SSC given their riverine migration and are able to swim through or navigate round areas of elevated SSC in the marine environment. Therefore, no LSE as a result of increased SSC during construction, operation and decommissioning can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- b. Twaite shad, sea lamprey, river lamprey and salmon are highly mobile and able to avoid collisions with installation and maintenance vessels and infrastructure. Therefore, no LSE as a result of physical injury can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- c. Invasive species such as parasites or migratory fish species introduced as a result of construction, operation and decommissioning will not harm twaite shad, sea lamprey, river lamprey and salmon given that there is no evidence to suggest that these types of invasive species are introduced via biofouling or ballast water. Therefore, no LSE as a result of invasive species can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Table 7.2 and 7.4 and 7.6).
- d. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.2 and 9.1.3. Tables 7.2. 7.4. 7.6 and 9.1. and Integrity Matrix 24 below).
- e. Twaite shad are hearing specialists due to the coupling of the ear with the swim bladder. Although TTS may occur if an individual is within 160 m of trenching equipment it is considered as this species is highly mobile and generally pelagic that they will move away before an impact occurs. River lamprey, sea lamprey and salmon are hearing generalists with potential underwater noise emissions from the construction, operation and decommissioning of the Proposed Development falling below the levels expected to produce mortality, mortal injury or recoverable injury. Therefore, no LSE as a result of noise and vibration can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- Twaite shad and salmon will be accustomed to vessel traffic and will navigate round or under installation, maintenance and decommissioning vessels. Therefore, no LSE as a result of visual disturbance can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.2, 7.4 and 7.6).
- g. Twaite shad and salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with EMF during operation of the Proposed Development. In addition, salmon show a lack of behavioural response to EMF and shad do not possess ampullary organs instead relying on sight or sensory organs to locate prey. River and sea lamprey use both the pelagic and benthic zones for migration and may therefore come into contact with weak EMF from the Proposed Development however no responses to electromagnetic fields have been recorded for this species. Therefore, no LSE as a result of EMF can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3, 7.5 and 7.7).
- h. Twaite shad and salmon are pelagic and generally use the zone close to the sea surface for migration so will not come into contact with any temperature changes during operation of the Proposed Development. Sea lamprey and river lamprey are highly mobile and not dependent on the seabed and will not come into contact with any temperature changes at seabed surface. Therefore, no LSE as a result of temperature changes can be concluded (HRA Report (APP-491, Rev 006) Section 7.2.2, Tables 7.3, 7.5 and 7.7).
- There is negligible potential for the Proposed Development to contribute to any potential in combination effects on twaite shad, sea lamprey, river lamprey and salmon with the exception of pollution events. Therefore, LSE cannot be ruled out for this effect in combination (HRA Report (APP-491, Rev 006) Section 8.2.2 and 9.1.3, Table 9.1 and Integrity Matrix 24 below).

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# HRA Screening Matrix 22: Solent Maritime SAC (Annex I Habitat Features)

Name of European si	ite and	desi	gnatio	on: S	olent	Marit	ime S	AC																
EU Code: UK0030059		_																						
Distance to Proposed	d Deve	lopm	ent: (	) km							I ilral	F#a	-16 1	ha Dua		d Dave	lanma	-1						
European site features  Effect	Increased SSC/smotherin			Contaminated sediments			Habitat disturbance/loss			Hydrodynamic changes			Invasive species			Pollution events			EMF /Temperature			In o	nation	
Stage of Development	С	Ō	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Estuaries [1130]	√a	√ b	√a	×c	×c	×c	×d	×d	×d	×e	×e	×e	√f	√f	√f	√g	√g	√g		×h		√i	√i	√i
Mudflats and sandflats (not submerged at low tide) [1140]	√a	√ b	√a	×c	×c	×c	×d	×d	×d	×е	×е	×е	√f	√f	√f	√g	√g	√g		×h		√i	√i	√i
Sandbanks (slightly covered by seawater all the time) [1110]	√a	√ b	√a	×c	×c	×c	×d	×d	×d	×е	×e	×е	√f	√f	√f	√g	√g	√g		×h		√i	√i	√i
Spartina swards [1320]	√a	√ b	√a	×c	×c	×c	×d	×d	×d	×е	×e	×е	√f	√f	√f	√g	√g	√g		×h		√i	√i	√i
Atlantic salt meadows [1330]	√a	b	√a	×c	×c	×c	×d	×d	×d	×е	×е	×е	√f	√f	√f	√g	√g	√g		×h		√i	√i	√i
Salicornia and other annuals colonising mud and sand [1310]	√a	√ b	√a	×c	×c	×c	×d	×d	×d	×е	×е	×е	√f	√f	√f	√g	√g	√g		×h		√i	√i	√i
Shifting dunes along the shoreline [2120]																								
Coastal lagoons [1150]																								
Annual vegetation of drift lines [1210]																								
Perennial vegetation of stony banks [1220]																								
Desmoulin's whorl snail ( <i>Vertigo</i> moulinsiana) [1016]																								

#### **Evidence supporting conclusions:**

- a. Due to the close proximity of the Solent Maritime SAC (including Langstone Harbour, the mouth of which is located less than a kilometre from the Marine Cable Corridor), and the resulting potential for high levels of SSC and sediment deposition within the SAC, it is considered that LSE cannot be ruled out for any feature which has connectivity to the work (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 8 below).
- **b.** Due to the close proximity of the Solent Maritime SAC, and the resulting potential for increased SSC and sediment deposition within the SAC during maintenance and repair work, it is considered that LSE cannot be ruled out for any feature which has connectivity to the work (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 8 below).
- c. Background levels of contaminants in sediments are generally low, and it is therefore considered that there is no potential for LSE to arise from any such resuspension (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- **d.** No connectivity as no marine activities will take place within designated areas (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- e. Any hydrodynamic changes resulting from seabed works for the project will be highly localised and are not therefore considered likely to result in significant effects (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- f. Potential for transfer of INIS exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 7 below).

- g. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out as a result of such events. There is however no potential for LSE from light or noise effects to arise (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 8 below).
- h. Due to burial depths, there will be negligible change in EMF compared to background levels, and as such it is considered there is no potential for LSE. Due to the use of HDD, the target burial depth under the SAC is 5 m. At this depth and as the cable will be contained within a duct, no temperature increases are considered likely to be detectable at the surface. It is considered there is no potential for LSE (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- i. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on Solent Maritime SAC features with the exception of increased SSC/smothering, invasive species and pollution events. Therefore, LSE cannot be ruled out for these effects in combination (HRA Report (APP-491, Rev 006) Sections 8.2.1 and 9.1.2, Table 9.1 and Integrity Matrix 7 below).

# HRA Screening Matrix 23: South Wight Maritime SAC (Annex I Habitat Features)

Name of Europ	Name of European site and designation: South Wight Maritime SAC																							
EU Code: UK0	030061	1																						
Distance to Pr	opose	d Deve	elopm	ent: 3	3.3 km	1																		
European site features				Likely Effects of the Proposed Development																				
Effect	Increased SSC/smothering			Habitat disturbance/loss			Contaminated sediments			Hydrodynamic changes			Invasive species			Pollution events			EMF/Temperature			In combination effects		
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Reefs [1170]	√a	√b	√a	Хc	×c	×c	×d	×d	×d	×е	×e	×e	√f	√f	√f	√g	√g	√g		×c		√h	√h	√h
Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230]																								
Submerged or partially submerged sea caves [8330]	√a	√b	√a	×c	×c	×c	×d	×d	×d	×e	×e	×е	√f	√f	√f	√g	√g	√g		×c		√h	√h	√h

#### **Evidence supporting conclusions:**

- a. Due to the proximity of the SAC, and the resulting potential for SSC and sediment deposition within the SAC, it is considered that LSE cannot be ruled out for any feature which has connectivity to the work (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 9 below).
- b. Due to the proximity of the SAC, and the resulting potential for SSC and sediment deposition within the SAC during maintenance and repair work, it is considered that LSE cannot be ruled out for any feature which has connectivity to the work (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 9 below).
- c. No connectivity as no marine activities/cable installation will take place within designated area (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- **d.** Background levels of contaminants in sediments are generally low, and it is therefore considered that there is no potential for LSE to arise from any such resuspension (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- e. Any hydrodynamic changes resulting from seabed works for the project will be highly localised and are not therefore considered likely to result in significant effects (HRA Report (APP-491, Rev 006) Section 7.2.1, Table 7.1).
- f. Potential for transfer of INIS exists, therefore LSE cannot be ruled out (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 8 below).
- g. Potential for hydrocarbon and/or chemical pollution events exists, therefore LSE cannot be ruled out as a result of such events. There is however no potential for LSE from light or noise effects to arise (HRA Report (APP-491, Rev 006) Sections 7.2.1 and 9.1.2, Tables 7.1 and 9.1, and Integrity Matrix 9 below).
- h. There is negligible potential for the Proposed Development to contribute to any potential in combination effects on South Wight Maritime SAC features with the exception of increased SSC/smothering, invasive species and pollution events. Therefore, LSE cannot be ruled out for these effects in combination (HRA Report (APP-491, Rev 006) Sections 8.2.1 and 9.1.2, Table 9.1 and Integrity Matrix 8 below).

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## HRA Screening Matrix 24: Solent and Isle of Wight Lagoons SAC (pre-screened out for Annex I habitat features)

Name of European site and designation: Solen	t and Is	sle of \	Night	Lago	ons S	AC																		
EU Code: UK0017073																								
Distance to Proposed Development: 4.6 km																								
European site features										Li	kely E	ffects	of th	e Pro	posed	d Deve	lopm	ent						
Effect	lı lı	ncreas	ed		Habit	at	Cor	ntamin	ated	Нус	lrodyn	amic	I	nvasiv	/e	P	ollutio	n		Tempe	roturo	In co	ombina	ation
	SSC	s/smoth	nering	distu	urband	ce/loss	Se	edime	nts	(	change	es		specie	es		events	S	LIVIE/	rempe	rature	(	effects	;
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Coastal lagoons [1150]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a

#### **Evidence supporting conclusions:**

a. Coastal lagoons do not overlap with the Marine Cable Corridor and are isolated from the sea via a barrier such as seawalls and sluice gates. Therefore, they have no connectivity with marine activities (HRA Report (APP-491, Rev 006) Section 6.2.2).

# HRA Screening Matrix 25: Wight-Barfleur Reef SAC (pre-screened out for Annex I habitat features)

Name of European site and designation: Wight-	Barfle	ur Rec	ef SAC	;																				
EU Code: UK0030380																								
Distance to Proposed Development: 34 km																								
European site features										Lil	kely E	ffects	of th	e Pro	pose	d Deve	elopm	ent						
Effect	lr	ncreas	ed		Habit	at	Cor	ntamin	ated	Hyd	rodyn	amic		nvasiv	ve	F	ollutio	n	   EN4E/	Tempe	roturo	In co	mbina	ation
	SSC	/smoth	nering	distu	urband	ce/loss	Se	edimer	nts	C	hange	es		specie	es		events	S	EIVIF/	rempe	rature	e	effects	;
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Reefs [1170]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a

### **Evidence supporting conclusions:**

**a.** No connectivity between Proposed Development and designated site (HRA Report (APP-491, Rev 006) Section 6.2.2).

## HRA Screening Matrix 26: Bassurelle Sandbank SAC (pre-screened out for Annex I habitat features)

Name of European site and designation: Bassu	relle S	andba	nk SA	C																				
EU Code: UK0030368																								
Distance to Proposed Development: 60 km																								
European site features										Li	kely E	ffects	of th	e Pro	posed	Deve	elopm	ent						
Effect	1	ncreas /smoth	ed nering	dist	Habita urband	at e/loss	1	tamin edimer		, ,	lrodyna hange		l	nvasiv specie			Pollution events		EMF/	Tempe	rature		ombina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Sandbanks (slightly covered by seawater all the time) [1110]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a

#### **Evidence supporting conclusions:**

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a. No connectivity between Proposed Development and designated site (HRA Report (APP-491, Rev 006) Section 6.2.2).

## HRA Screening Matrix 27: Studland to Portland SAC (pre-screened out for Annex I habitat features)

Name of European site and designation: Studia EU Code: UK0030382																								
Distance to Proposed Development: 70 km																								
European site features										Lil	cely E	ffects	of th	e Pro	posed	Deve	elopm	ent						
Effect	1	ncreas /smotl		1	Habita urband	at :e/loss	1	tamin edimer		1	rodyna hange			nvasiv specie			Pollutic events		EMF/	Tempe	rature		ombina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Sandbanks (slightly covered by seawater all the time) [1110]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a

## **Evidence supporting conclusions:**

a. No connectivity between Proposed Development and designated site (HRA Report (APP-491, Rev 006) Section 6.2.2).

## HRA Screening Matrix 28: Littoral Cauchois SAC (pre-screened out for Annex I habitat features)

Name of European site and designation: Littoral Cau	chois	SAC																			
EU Code: FR2300139																					
Distance to Proposed Development: 52.7 km																					
European site features								Likely	Effects	s of the	e Pro	posed I	Develo	pmen	t						
Effect	1	ncreas :/smoth		dist	Habit urband	at ce/loss	1	drodyna change		Invas	sive sp	ecies	Pollu	ution e	vents	EMF/	Tempeı	rature	In c	ombina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Récifs (Reefs) [1170]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a
Perennial vegetation of stony banks [1220]																					
Vegetated sea cliffs Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]																					
Nutrient-poor shallow waters with aquatic vegetation on sandy plains Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> ) [3110] Calcium-rich nutrient-poor lakes, lochs and pools Hard oligo-mesotrophic waters with benthic vegetation of																					
Chara spp. [3140]																					
Naturally nutrient-rich lakes or lochs which are often dominated by pondweed Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> -type vegetation [3150]																					
Wet heathland with Dorset heath and cross-leaved heath Temperate Atlantic wet heaths with <i>Erica ciliaris</i> and <i>Erica tetralix</i> [4020]																					

Name of European site and designation: Littoral Cau	chois	SAC																			
EU Code: FR2300139																					
Distance to Proposed Development: 52.7 km																					
European site features								Likely	<b>Effect</b>	s of th	e Pro	posed	Devel	opmen	ıt						
Effect	1	ncreas /smoth		dist	Habita urbanc		1	drodyna change		Inva	sive sp	pecies	Poll	ution e	vents	EMF/	Tempe	rature		ombina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Récifs (Reefs) [1170]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a
Dry heaths European dry heaths [4030]																					
Purple moor-grass meadows Molinia meadows on																					
calcareous, peaty or clayey-silt-laden soils ( <i>Molinion</i> caeruleae) [6410]																					
Tall herb communities <i>Hydrophilous</i> tall herb fringe																					
communities of plains and of the montane to alpine																					
levels [6430]																					
Lowland hay meadows Lowland hay meadows																					
(Alopecurus pratensis, Sanguisorba officinalis) [6510]																					
Hard-water springs depositing lime Petrifying springs																					
with tufa formation (Cratoneurion) [7220]																					
Alkaline fens [7230]																					
Caves not open to the public [8310]																					
Alluvial forests with Alnus glutinosa and Fraxinus																					
excelsior (Alno-Padion, Alnion incanae, Salicion albae)																					
[91E0]																					
Atlantic acidophilous beech forests with <i>Ilex</i> and																					
sometimes also <i>Taxus</i> in the shrublayer ( <i>Quercion</i>																					
robori-petraeae or Ilici-Fagenion) [9120]																					
Asperulo-Fagetum beech forests [9130]																					
Tilio-Acerion forests of slopes, screes and ravines [9180]																					
Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains [9190]																					
Great crested newt ( <i>Triturus cristatus</i> ) [1166]																					

a. No connectivity between Proposed Development and designated site (HRA Report (APP-491, Rev 006) Section 6.2.2).

## HRA Screening Matrix 29: Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC (pre-screened out for Annex I habitat features)

Name of European site and designatio EU Code: FR3102004	ii. Macilo et dalles il	y ar aa																			
Distance to NSIP: 58.8 km																					
European site features							L	ikely	Effect	s of th	e Prop	osed	Develo	pmen	ıt						
Effect		ncreas /smoth	ed nering	dist	Habita urbanc	at e/loss	1	Irodyna	I Invasive species   Poliution events   FiviF/Lemberature												
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Reefs (Récifs) [1170]	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a		×a		×a	×a	×a

#### **Evidence supporting conclusions:**

a. No connectivity between Proposed Development and designated site (HRA Report (APP-491, Rev 006) Section 6.2.2).

### HRA Screening Matrix 30: Southern North Sea SAC (pre-screened out for marine mammal features)

EU Code: UK0030395	5																	
Distance to NSIP: 13	7 km																	
European site features†††							Like	ely Effects	s of the P	roposed l	Developm	ent						
Effect	Au	uditory inju	ıry	L	Disturbanc	е		Collision		Inc	direct effe	cts		Pollution		In con	nbination	effects
Stage of Development	С	Ó	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1351 Harbour porpoise	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×b	×b	×b
Supporting habitats (water column)										×c	×c	×c	×c	×c	×c	×c	×c	×c

#### **Evidence supporting conclusions:**

- a. The potential for connectivity of harbour porpoises which use the Southern North Sea SAC and the Proposed Development is considered to be negligible (see Appendix 2 of the HRA Report, APP-502). Therefore, the Southern North Sea SAC has been pre-screened out of the HRA (HRA Report (APP-491, Rev 006) Section 6.2.4, Table 6.5).
- b. Because the potential for connectivity of harbour porpoises which use the Southern North Sea SAC and the Proposed Development is considered to be negligible, there is no potential for the Proposed Development to contribute to any potential in combination effects on harbour porpoises which are a qualifying feature of the Southern North Sea SAC (HRA Report (APP-491, Rev 006)) Section 8.2.3).
- c. The Proposed Development is too far from the Southern North Sea SAC (137 km) for there to be any potential effect on the supporting habitat (water column) within the SAC. Because there is no effect pathway there is no potential for LSE either alone or in combination (HRA Report (APP-491, Rev 006) Section 6.4.4).

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<sup>†††</sup> As per http://jncc.defra.gov.uk/protectedsites/sacselection/n2kforms/UK0030395.pdf [accessed 11/06/2019]

## HRA Screening Matrix 31: The Wash and North Norfolk Coast SAC (pre-screened out for marine mammal features)

Name of European site and designation: The Was	h and N	North N	orfolk (	Coast S	AC													
EU Code: UK0017075																		
Distance to Proposed Development: 370 km																		
European site features <sup>‡‡‡</sup>							Likely	y Effects	of the	Propose	d Devel	opment						
Effect	Auc	litory in	iury	D	isturban	ce		Collision	า	Ind	lirect effe	ects		Pollution	)	In com	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1365 Harbour seal	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×b	×b	×b
Supporting habitats (water column)										×c	×c	×c	×c	×c	×c	×c	×c	×c
1355 Otter																		
1110 Sandbanks which are slightly covered by sea																		
water all the time																		
1140 Mudflats and sandflats not covered by																		
seawater at low tide																		
1160 Large shallow inlets and bays																		
1170 Reefs																		
1310 Salicornia and other annuals colonising mud																		
and sand																		
1330 Atlantic salt meadows																		
1420 Mediterranean and thermo-Atlantic																		
halophilous scrubs																		
1150 Coastal lagoons																		

#### **Evidence supporting conclusions:**

- a. The potential for connectivity of harbour seals which use The Wash and North Norfolk Coast SAC and the Proposed Development is considered to be negligible (see Appendix 2 of the HRA Report ,APP-502). Therefore, The Wash and North Norfolk Coast SAC has been pre-screened out of the HRA (HRA Report (APP-491, Rev 006) Section 6.2.4, Table 6.5).
- b. Because the potential for connectivity of harbour seals which use The Wash and North Norfolk Coast SAC and the Proposed Development is considered to be negligible, there is no potential for the Proposed Development to contribute to any potential in combination effects on harbour seals which are a qualifying feature of The Wash and North Norfolk Coast SAC (HRA Report (APP-491, Rev 006) Section 8.2.3).
- c. The Proposed Development is too far from The Wash and North Norfolk Coast SAC (370 km) for there to be any potential effect on the supporting habitat (water column) within the SAC. Because there is no effect pathway there is no potential for LSE either alone or in combination (HRA Report (APP-491, Rev 006) Section 6.4.4).

<sup>###</sup> As per http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUcode=UK0017075 [accessed 11/06/2019]

### HRA Screening Matrix 32: Pembrokeshire Marine SAC (pre-screened out for marine mammal features)

Name of European site and designation: Pembrokeshire	e Marin	e SAC																
EU Code: UK0013116																		
Distance to Proposed Development: 542 km																		
European site features§§§							Likely	<b>Effect</b>	s of the	Propo	sed De	velopm	ent					
Effect	Auc	ditory in	jury	Di	sturban	ce	(	Collisio	n	Ind	lirect ef	fects		<b>Pollution</b>	า	In com	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1364 Grey seal	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×b	×b	×b
Supporting habitats (water column)										×c	×c	×c	×c	×c	×c	×c	×c	×c
1355 Otter																		
1095 Sea lamprey																		
1099 River lamprey																		
1102 Allis shad																		
1103 Twaite shad																		
1441 Shore dock																		
1130 Estuaries																		
1160 Large shallow inlets and bays																		
1170 Reefs																		
1110 Sandbanks which are slightly covered by sea water																		
all the time																		
1140 Mudflats and sandflats not covered by seawater at																		
low tide																		
1150 Coastal lagoons																		
1330 Atlantic salt meadows																		
8330 Submerged or partially submerged sea caves																		

#### **Evidence supporting conclusions:**

- a. The potential for connectivity of grey seals which use the Pembrokeshire Marine SAC and the Proposed Development is considered to be negligible (see Appendix 2 of the HRA Report, APP-502) Therefore, the Pembrokeshire Marine SAC has been pre-screened out of the HRA (HRA Report (APP-491, Rev 006) Section 6.2.4, Table 6.5).
- b. Because the potential for connectivity of grey seals which use the Pembrokeshire Marine SAC and the Proposed Development is considered to be negligible, there is no potential for the Proposed Development to contribute to any potential in combination effects on grey seals which are a qualifying feature of the Pembrokeshire Marine SAC (HRA Report (APP-491, Rev 006) Section 8.2.3).
- c. The Proposed Development is too far from the Pembrokeshire Marine SAC (542 km) for there to be any potential effect on the supporting habitat (water column) within the SAC. Because there is no effect pathway there is no potential for LSE either alone or in combination (HRA Report (APP-491, Rev 006) Section 6.4.4).

<sup>§§§</sup> As per http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUcode=UK0013116 [accessed 11/06/2019]

## HRA Screening Matrix 33: Cardigan Bay SAC (pre-screened out for marine mammal features)

Name of European site and designation: Cardig	gan Bay S	AC																
EU Code: UK0012712																		
Distance to Proposed Development: 618 km																		
European site features****							Likely	Effects	of the F	roposed	Develop	ment						
Effect	Aud	litory in	jury	Di	sturban	ce		Collision	า	Ind	lirect effe	cts		Pollution	)		combinat effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×a	×b	×b	×b
1364 Grey seal	ХC	Хc	Хc	ХC	Хc	Хc	×c	Хc	ХC	×c	×c	Хc	×c	×c	×c	Хc	×c	Хc
Supporting habitats (water column)										×d	×d	×d	×d	×d	×d	×d	×d	×d
1095 Sea lamprey																		
1099 River lamprey																		
1110 Sandbanks which are slightly covered by																		
sea water all the time																		
1170 Reefs																		
8330 Submerged or partially submerged sea																		
caves																		

#### **Evidence supporting conclusions:**

- a. The potential for connectivity of bottlenose dolphins which use the Cardigan Bay SAC and the Proposed Development is considered to be negligible (see Appendix 2 of the HRA Report, APP-502). Therefore, the Cardigan Bay SAC has been pre-screened out of the HRA (HRA Report (APP-491, Rev 006) Section 6.2.4, Table 6.5).
- b. Because the potential for connectivity of bottlenose dolphins which use the Cardigan Bay SAC and the Proposed Development is considered to be negligible, there is no potential for the Proposed Development to contribute to any potential in combination effects on bottlenose dolphins which are a qualifying feature of the Cardigan Bay SAC (HRA Report (APP-491, Rev 006) Section 8.2.3).
- c. The potential for connectivity of grey seals which use the Cardigan Bay SAC and the Proposed Development is considered to be negligible because the Proposed Development does not fall within the likely foraging range of grey seals which are a feature of the Cardigan Bay SAC (none of the grey seals using the Welsh coast were tracked further east into the Channel than the area off Torquay; see Appendix 2 of the HRA Report APP-491, Rev 0063.2). There is therefore no potential for the Proposed Development to contribute to any potential alone or in combination effects on grey seals which are a qualifying feature of the Cardigan Bay SAC (HRA Report (APP-491, Rev 006) Section 8.2.3).
- d. The Proposed Development is too far from the Cardigan Bay SAC (618 km) for there to be any potential effect on the supporting habitat (water column) within the SAC. Because there is no effect pathway there is no potential for LSE either alone or in combination (HRA Report (APP-491, Rev 006) Section 6.4.4).

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<sup>\*\*\*\*</sup> As per http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUcode=UK0012712 [accessed 11/06/2019]

# **Integrity Matrices - Potential Effects**

Potential effects upon the European site(s)†††† which are considered within the submitted HRA Report (APP-491, Rev 006) are provided in the table below. Effects have been grouped where appropriate for ease of presentation.

## Effects considered within the integrity matrices for marine ornithology

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information#	Effects in screening matrices as
UK sites identified:	Alone:	Alone:
<ul> <li>Solent and Dorset Coast SPA</li> </ul>	Disturbance & displacement	<ul> <li>Disturbance &amp; displacement</li> </ul>
<ul> <li>Chichester and Langstone</li> </ul>	Indirect effects	Indirect effects
Harbours SPA.	In combination:	In combination:
	Disturbance & displacement	<ul> <li>Disturbance &amp; displacement</li> </ul>
	Indirect effects	Indirect effects

### Effects considered within the integrity matrices for Annex I Habitat Features

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information#	Effects in screening matrices as
UK sites identified:	Alone:	Alone:
<ul> <li>Solent Maritime SAC</li> </ul>	<ul> <li>Deposition of Sediment (Smothering)</li> </ul>	<ul> <li>Increased SSC/smothering</li> </ul>
<ul> <li>South Wight Maritime SAC</li> </ul>	<ul> <li>Increased SSC</li> </ul>	<ul> <li>Pollution</li> </ul>
-	<ul> <li>Pollution</li> </ul>	<ul> <li>Invasive Species</li> </ul>
	<ul> <li>Invasive Species</li> </ul>	
	In combination:	In combination:
	<ul> <li>Deposition of Sediment (Smothering)</li> </ul>	<ul> <li>Increased SSC/smothering</li> </ul>
	<ul> <li>Increased SSC</li> </ul>	<ul> <li>Pollution</li> </ul>
	<ul> <li>Pollution</li> </ul>	<ul> <li>Invasive Species</li> </ul>
	<ul> <li>Invasive Species</li> </ul>	

## Effects considered within the integrity matrices for Fish

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information#	Effects in screening matrices as
UK sites identified:	Alone:	Alone:
<ul> <li>River Itchen SAC</li> </ul>	<ul> <li>Increased SSC</li> </ul>	<ul> <li>Increased SSC</li> </ul>
<ul> <li>River Avon SAC</li> </ul>	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>

†††† As defined in Advice Note 10.

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Designation	Effects described in submission information#	Effects in screening matrices as
	In combination:	In combination:
	<ul> <li>Increased SSC</li> </ul>	<ul> <li>Increased SSC</li> </ul>
	• Pollution	<ul> <li>Pollution</li> </ul>
River Axe SAC	Alone:	Alone:
<ul> <li>Plymouth Sounds and Estuaries</li> </ul>	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
SAC	In combination:	In combination:
	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
French sites identified:	Alone:	Alone:
<ul> <li>Littoral Cauchois SAC</li> </ul>	<ul> <li>Pollution</li> </ul>	<ul> <li>Pollution</li> </ul>
Estuaires et Littoral Picards (Baies		
de Somme et d'Authie) SAC	In combination:	In combination:
Baie de Canche et Couloir des		
Trois Estuaires SAC	• Pollution	<ul> <li>Pollution</li> </ul>
<ul> <li>Baie de Seine Orientale SAC</li> </ul>		
<ul> <li>Estuaire de la Seine SAC</li> </ul>		

# Effects considered within the integrity matrices for marine mammals

#The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information#	Effects in integrity matrices as
French sites identified:  Littoral Cauchois SAC  Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC  Baie de Canche et couloir des trois estuaires SAC  Estuaires et littoral picards (baies de Somme et d'Authie) SAC  Estuaire de la Seine SAC  Baie de Seine Orientale SAC  Récifs Gris-Nez Blanc-Nez SAC	• Pollution	• Pollution

# Effects considered within the integrity matrices for onshore ecology

# The information in this column relates to all phases of the project (i.e. construction, operation and decommissioning) unless otherwise stated.

Designation	Effects described in submission information#	Effects in screening matrices as
UK sites identified:	Alone:	Alone:
	Disturbance & displacement	<ul> <li>Disturbance &amp; displacement</li> </ul>
	Accidental spills	Accidental spills
ichester and Langstone Harbours  • Litter	• Litter	• Litter
SPA.	In combination:	In combination:
Portsmouth Harbour SPA	Disturbance & displacement	<ul> <li>Disturbance &amp; displacement</li> </ul>
	Accidental spills	<ul> <li>Indirect effects</li> </ul>
	• Litter	

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## **STAGE 2: INTEGRITY MATRICES**

The UK European sites for which a LSE has been identified are as follows:

- Solent and Dorset Coast SPA
- Chichester and Langstone Harbours SPA
- Portsmouth Harbour SPA
- Solent and Southampton Water SPA
- Pagham Harbour SPA
- Solent Maritime SAC
- South Wight Maritime SAC
- River Itchen SAC
- River Avon SAC
- River Axe SAC
- Plymouth Sound and Estuaries SAC

The transboundary European sites for which LSE has been identified are as follows:

- Littoral Cauchois SAC
- Littoral Seino-Marin SPA
- Estuaires et Littoral Picards (Baies de Somme et d'Authie) SAC
- Baie de Canche et Couloir des Trois Estuaires SAC
- Baie de Seine Orientale SAC
- Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC
- Estuaire de la Seine SAC
- Récifs Gris-Nez Blanc-Nez SAC

Evidence for the conclusions reached in integrity is detailed within the footnotes to the matrices below.

#### Matrix Key:

✓ = Adverse effect on site integrity cannot be excluded

**x** = Adverse effect on site integrity **can** be excluded

C = construction

O = operation (and repair/maintenance)

D = decommissioning

B = breeding

W = wintering/non-breeding

P = passage

Where effects are not applicable to a particular feature they are greyed out.

### HRA Integrity Matrix 1A: Solent and Dorset Coast SPA (Marine Ornithology)

<b>Distance to Proposed Development:</b>	0.0 km																	
•				Ad	verse	Effect	on Int	egrity	from tl	ne Pro	posed	Devel	opmer	nt (Alo	ne)			
European site feature	_	turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Little tern (B)	×a	×a	×a	×b	×b	×b							×c	×c	×c	Хc	Хc	Хc
Common tern (B)				×b	×b	×b							×c	Хc	Хc	Хc	Хc	×c
Sandwich tern (B)				×b	×b	×b							×c	×c	×c	ХC	ХC	×c
Supporting habitat (water column)				×b	×b	×b							Хc	Хc	Хc	Хc	Хc	Хc

#### **Evidence supporting conclusions:**

- HDD works in Langstone Harbour will occur c.4 km from the closest breeding colony on Baker's Island, with little terns often foraging within 1 km of their nest site. Noise and visual disturbance associated with construction and repair/maintenance works will not be noticeable above baseline levels of disturbance within Langstone Harbour. Whilst considered unlikely, should little terns be temporarily disturbed from foraging habitat in the vicinity of the landfall within Langstone Harbour, other equivalent shallow water foraging sites are present within their maximum foraging range. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.4, Tables 10.5 and 10.6).
- Where the cable corridor crosses Langstone Harbour, HDD will be used. The exit point is expected to be onshore, thus an increase in SSC and any resultant smothering and/or reduced dissolved oxygen ('DO') is not predicted to affect key prey species present in the water column at Langstone Harbour. Outside of Langstone Harbour, the permanent loss of fish, shellfish and benthic habitat as a result of non-burial cable protection is not predicted to affect key prey species since these measures will be limited in spatial extent. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.4, Tables 10.5 and 10.6).
- Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events from and therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.4, Tables 10.5 and 10.6).

## HRA Integrity Matrix 1B: Solent and Dorset Coast SPA (Marine Ornithology – In combination)

Name of European Site: Solent and Do	rset Coa	st SPA	(Mari	ne Orn	itholo	gy)												
Distance to Proposed Development: 0.	0 km																	
			A	dvers	e Effe	ct on Ir	ntegrit	y from	the Pr	ropose	d Dev	elopm	ent ( <u>In</u>	Comb	inatio	<u>1</u> )		
uropean site feature	I	turban placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Little tern (B)	×a	×a	×a	×b	×b	×b							×c	×c	×c	×c	×c	ХC
Common tern (B)				×b	×b	×b							×c	ХC	×c	×c	ХC	×c
Sandwich tern (B)				×b	×b	×b							Хc	Хc	×c	Хc	Хc	Хc
Supporting habitat (water column)				×b	×b	×b							×c	×c	Хc	Хc	Хc	Хc

#### **Evidence supporting conclusions:**

HDD works in Langstone Harbour will occur c.4 km from the closest breeding colony on Baker's Island, with little terns often foraging within 1 km of their nest site. Little terns are known to breed and forage within Chichester and Langstone Harbours despite baseline levels of anthropogenic noise and visual disturbance. Disturbance associated with construction and repair/maintenance works will not be noticeable above baseline levels of disturbance within Langstone Harbour. Whilst considered unlikely, should little terns be temporarily disturbed from foraging habitat in the vicinity of the landfall within Langstone Harbour, other equivalent shallow water foraging sites are present within their maximum foraging range. Therefore, there is no adverse effect from disturbance and

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- displacement. When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.4, Table 10.5 and 10.6).
- b. Where the cable corridor crosses Langstone Harbour, HDD will be used. The exit point is expected to be onshore, thus an increase in SSC and any resultant smothering and/or reduced dissolved oxygen ('DO') is not predicted to affect key prey species present in the water column at Langstone Harbour. Outside of Langstone Harbour, the permanent loss of fish, shellfish and benthic habitat as a result of non-burial cable protection is not predicted to affect key prey species since these measures will be limited in spatial extent (0.7 km² in total). When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.4, Tables 10.5 and 10.6).
- c. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore there will be no adverse effect on site integrity. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.4, Tables 10.5 and 10.6).

### HRA Integrity Matrix 2A: Chichester and Langstone Harbours SPA (Marine Ornithology)

Name of European Site: Chichester and Langstone Hark	ours S	PA (M	arine (	Ornitho	ology)													
Distance to Proposed Development: 0.1 km																		
				Ad	verse	Effect	on Int	egrity	from t	he Pro	posed	Devel	opmei	nt (Alo	ne)			
European site feature		turbano placem			rect eff			Collisio			INIS			dental			Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Shelduck (W)																		
Shoveler (W)																		
Wigeon (W)																		
Pintail (W)																		
Teal (W)																		
Red-breasted merganser (W)	×a	×a	×a	×b	×b	×b							×d	×d	×d	×d	×d	×d
Grey plover (W)																		
Ringed plover (W)																		
Curlew (W)																		
Bar-tailed godwit (W)																		
Turnstone (W)																		
Sanderling (W)																		
Dunlin (W)																		
Redshank (W)																		
Sandwich tern (B)				×b	×b	×b							×d	×d	×d	×d	×d	×d
Little tern (B)	Хc	Хc	Хc	×b	×b	×b							×d	×d	×d	×d	×d	×d
Common tern (B)			×b	×b	×b							×d	×d	×d	×d	×d	×d	
Supporting habitat (water column)				×b	×b	×b							×d	×d	×d	×d	×d	×d
Supporting habitat Coastal Lagoons																		
Supporting habitat Coastal reedbeds																		
Supporting habitat Freshwater and coastal grazing marsh																		

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Name of European Site: Chichester and Langstone Harb	ours s	PA (IVI	iarine (	Ornitne	ology)													
Distance to Proposed Development: 0.1 km																		
				Ac	lverse	Effect	on Int	egrity	from t	he Pro	posed	Deve	opmer	nt ( <u>Alo</u>	<u>ne</u> )	_		
European site feature		turban placen		Indi	rect eff	fects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Supporting habitat Salicornia and other annuals colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal rock																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mixed sediment																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		
Supporting habitat Subtidal coarse sediment																		
Supporting habitat Subtidal mixed sediment																		
Supporting habitat Subtidal mud																		
Supporting habitat Subtidal sand																		

#### Evidence supporting conclusions (also see HRA Report Section 10.4):

- a. HDD works in Langstone Harbour will occur >4 km from the closest wintering site at Farlington Marshes. Noise and visual disturbance associated with construction and maintenance/repair works will not be noticeable above baseline levels of disturbance within Langstone Harbour. Whilst considered unlikely, should red-breasted merganser be temporarily disturbed from their wintering sites within Langstone Harbour, other equivalent foraging and roosting sites are present in Chichester Harbour. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006)) Section 10.3, Tables 10.1 and 10.3).
- b. Where the cable corridor crosses Langstone Harbour, HDD will be used. The exit point is expected to be onshore, thus an increase in SSC and any resultant smothering and/or reduced dissolved oxygen ('DO') is not predicted to affect key prey species present in the water column at Langstone Harbour. Outside of Langstone Harbour, the permanent loss of fish, shellfish and benthic habitat as a result of non-burial cable protection is not predicted to affect key prey species since these measures will be limited in spatial extent. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1 and 10.3).
- c. HDD works in Langstone Harbour will occur c.4 km from the closest breeding colony on Baker's Island, with little terns often foraging within 1 km of their nest site. Noise and visual disturbance associated with construction and repair/maintenance works will not be noticeable above baseline levels of disturbance within Langstone Harbour. Whilst considered unlikely, should little terns be temporarily disturbed from foraging habitat in the vicinity of the landfall within Langstone Harbour, other equivalent shallow water foraging sites are present within their maximum foraging range. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1 and 10.3).
- d. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1 and 10.3).

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# HRA Integrity Matrix 2B: Chichester and Langstone Harbours SPA (Marine Ornithology – In Combination)

Name of European Site: Chichester and Langstone Harbours	SPA (I	Marine	Ornitl	nology	·)													
Distance to Proposed Development: 0.1 km																		
			P	dvers	e Effec	t on Ir	ntegrit	y from	the Pr	opose	d Dev	elopm	ent (In	Comb	inatio	<u>n</u> )		
European site feature	dis	turbano placem	ce &		rect eff			Collisio			INIS			dental			Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Shelduck (W)																		
Shoveler (W)																		
Wigeon (W)																		
Pintail (W)																		
Teal (W)																		
Red-breasted merganser (W)	×a	×a	×a	×b	×b	×b							×d	×d	×d	×d	×d	×d
Grey plover (W)																		
Ringed plover (W)																		
Curlew (W)																		
Bar-tailed godwit (W)																		
Turnstone (W)																		
Sanderling (W)																		
Dunlin (W)																		
Redshank (W)																		
Sandwich tern (B)													×d	×d	×d	×d	×d	×d
Little tern (B)	×c	×c	×c	×b	×b	×b							×d	×d	×d	×d	×d	×d
Common tern (B)													×d	×d	×d	×d	×d	×d
Supporting habitat (water column)				×b	×b	×b							×d	×d	×d	×d	×d	×d
Supporting habitat Coastal Lagoons																		
Supporting habitat Coastal reedbeds																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuals colonising mud																		
and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal rock																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mixed sediment																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal and muddy sand																		
Supporting habitat Subtidal coarse sediment																		
Supporting nabital Subtidal Coarse Sediment																		

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Name of European Site: Chichester and Langstone H	larbours SPA (I	Marine	Ornitl	nology	)													
Distance to Proposed Development: 0.1 km																		
			Δ	dvers	e Effec	ct on Ir	ntegrity	y from	the P	opose	d Dev	elopm	ent ( <u>In</u>	Comb	inatio	<u>n</u> )		
European site feature	<b>I</b>	turban placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Supporting habitat Subtidal mixed sediment																		
Supporting habitat Subtidal mud																		
Supporting habitat Subtidal sand																		

#### Evidence supporting conclusions (also see HRA Report Section 10.4):

- HDD works in Langstone Harbour will occur >4 km from the closest wintering site at Farlington Marshes. Red-breasted mergansers are known to roost and forage within Chichester and Langstone Harbours despite baseline levels of anthropogenic noise and visual disturbance. Disturbance associated with construction and maintenance/repair works will not be noticeable above baseline levels of disturbance within Langstone Harbour. Whilst considered unlikely, should red-breasted merganser be temporarily disturbed from their wintering sites within Langstone Harbour, other equivalent foraging and roosting sites are present in Chichester Harbour. Therefore, there is no adverse effect from disturbance and displacement. When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1 and 10.3).
- b. Where the cable corridor crosses Langstone Harbour, HDD will be used. The exit point is expected to be onshore, thus an increase in SSC and any resultant smothering and/or reduced dissolved oxygen ('DO') is not predicted to affect key prey species present in the water column at Langstone Harbour. Outside of Langstone Harbour, the permanent loss of fish, shellfish and benthic habitat as a result of non-burial cable protection is not predicted to affect key prey species since these measures will be limited in spatial extent (0.7 km² in total). When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1 and 10.3).
- c. HDD works in Langstone Harbour will occur c.4 km from the closest breeding colony on Baker's Island, with little terns often foraging within 1 km of their nest site. Little terns are known to breed and forage within Chichester and Langstone Harbours despite baseline levels of anthropogenic noise and visual disturbance. Disturbance associated with construction and repair/maintenance works will not be noticeable above baseline levels of disturbance within Langstone Harbour. Whilst considered unlikely, should little terns be temporarily disturbed from foraging habitat in the vicinity of the landfall within Langstone Harbour, other equivalent shallow water foraging sites are present within their maximum foraging range. Therefore, there is no adverse effect from disturbance and displacement. When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is considered that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1 and 10.3).
- d. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore will be no adverse effect on site integrity. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.1and 10.3).

### HRA Integrity Matrix 2C: Chichester and Langstone Harbours SPA (Onshore Ecology)

Name of European Site: Chichester and Langstone Harbours SPA (Onshore Ornithology)

**Distance to Proposed Development: 0.1 km** 

						Li	ikely Eff	fects of	the Prop	osed De	velopme	ent (Alo	ne)					
European site feature	1	sturbar splacei		Lig	ht pollu			direct ef			INIS	1		idental s	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	×a		×a										×d	×d	×d	Хe	×e	Хe
Shelduck (W)	×b		×b										×d	×d	×d	×e	×e	×e
Shoveler (W)	×b		×b										×d	×d	×d	×e	×e	×e
Wigeon (W)	×b		×b										×d	×d	×d	×e	Хe	×e
Pintail (W)	×b		×b										×d	×d	×d	×e	Хe	Хe
Teal (W)	×b		×b										×d	×d	×d	×e	Хe	Хe
Red-breasted merganser (W)																		
Grey plover (W)	×b		×b										×d	×d	×d	×e	Хe	×e
Ringed plover (W)													×d	×d	×d	Хe	×e	×e
Curlew (W)	×b		×b										×d	×d	×d	×e	×e	×e
Bar-tailed godwit (W)	×b		×b										×d	×d	×d	×e	×e	×e
Turnstone (W)													×d	×d	×d	×e	×e	×e
Sanderling (W)													×d	×d	×d	×e	×e	×e
Dunlin (W)													×d	×d	×d	×e	×e	×e
Redshank (W)	×b		×b										×d	×d	×d	×e	×e	×e
Waterfowl assemblage (W)	×a		×a										×d	×d	×d	×e	×e	×e
Sandwich tern (B)													×d	×d	×d	×e	×e	×e
Little tern (B)													×d	×d	×d	×e	×e	×e
Common tern (B)													×d	×d	×d	×e	×e	×e
Supporting habitat: freshwater and coastal							×c		×c				×d	×d	×d	×e	×e	×e
grazing marsh																		

### **Evidence supporting conclusions:**

a. Effects of the construction stage on Chichester and Langstone Harbour SPA and the dark-bellied brent goose and the waterfowl assemblage features will be avoided by restricting works within the winter season, defined as October to March (the period when SPA birds such as dark-bellied brent goose arrive from their breeding grounds (Snow and Perrins, 1998). A detailed overview of the working restrictions were provided in Chapter 16: Onshore Ecology (APP-131) and Appendix 16.14: Winter Working Restriction for Features of Chichester & Langstone Harbours SPA (APP-422) and then subject to revisions following consultation with Natural England which are captured in the updated Outline Onshore Construction Environmental Monitoring Plan (OOCEMP; APP-505 Rev004). Adoption of Principle 1 (construction works cannot take place in SWBGS) will offset direct effects on those SWBGS sites that lie within the Order Limits as detailed above (as these sites will not be subject to works in the winter period when they are used by SPA birds). Adoption of Principle 6 includes the consideration of both construction noise from trenching / road saw activities and HDD. Trenching / road saw noise at 69dbAmax leads to overlap of varying extents, with fourteen SWBGS sites. Construction work at twelve SWBGS sites is restricted during October – March on this basis. In accordance with the requirements of the OOCEMP, screening at least 2 m high around the perimeter of the HDD compounds is required for the purpose of noise mitigation. Example screening

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solutions are presented in plate 6.1 of the OOCEMP (APP-505 Rev04). With the exception of HDD-3 and HDD-6, HDD works will not impact SWBGS following the application of screening which will prevent any noise effects of over 69 dB reaching SWBGS sites. HDD-3 noise levels will not extend beyond the site compound and therefore only impact hardstanding habitat and not effecting the integrity of the SWBGS. Noise levels from HDD-6 marginally overlap with the P23A SWBGS. However, as the HDD compound lies within the SWBGS, it is already subject to Principle 1 so that winter work (October to March inclusive) is restricted. The SPA is in an urban setting and recent research has established that visual disturbance does not have a significant impact on waterbirds in an estuary close to conurbations (Goss-Custard *et al.*, 2019). The screening at the perimeter of HDD compounds will however reduce visual disturbance to indistinguishable levels regardless of the baseline environment. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev003) Section 10.3, Tables 10.2 and 10.4).

- b. Effects of the construction stage on Chichester and Langstone Harbour SPA and its waterbird features will be avoided by restricting works within the winter season, defined as October to March (the period when SPA birds arrive from their breeding grounds (Snow and Perrins, 1998). Adoption of the Principle 6 which states that wherever possible, percussive piling or works with heavy machinery (i.e. plant resulting in a noise level in excess of 69dbAmax measured at the sensitive receptor) should be avoided during the bird overwintering period has been undertaken with regards to trenching / road saw and HDD works. All species were found to be restricted to intertidal habitat during baseline surveys of the Proposed Development. Noise effects from both trenching / road saw and HDD works overlaps at 69dbAmax is extremely limited with regards to intertidal habitat of the SPA. Trenching / road saw construction is restricted along Eastern Road because of overlap with SWBGS sites so this section will also not provide any disturbance to adjacent intertidal habitat. The only other section of the route that is restricted by Principle 6 is the section of the Onshore Cable Route from Milton Locks north to the P23B SWBGS. The SPA is in an urban setting and recent research has established that visual disturbance does not have a significant impact on waterbirds in an estuary close to conurbations (Goss-Custard et al., 2019). The screening at the perimeter of HDD compounds (as presented in plate 6.1 of the OOCEMP APP-505 Rev04). will however also reduce visual disturbance to indistinguishable levels regardless of the baseline environment. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).
- c. No habitat within the SPA site will be lost on either a permanent or temporary basis as a result of onshore construction / decommissioning activities. Several SWBGS sites do however lie within the Order Limits, namely: P08A, P11, P23A, P23B and P23R. Restoration measures will be implemented which require completion and grass sward re-established to provide a suitable food resource by October when brent geese return to the Solent to winter. The choice of restoration approach is primarily dependent on the time available within the summer growing season for implementation. Reseeding is not likely to be the optimal technique after May so that for any restoration works after this month, re-turfing would be implemented. These measures including details of site preparation, establishment and aftercare are provided in the revised Onshore Outline CEMP (APP-505 Rev004). P211, P23A and P23 R will be subject to re-turfing restoration within the appropriate timescales to allow reestablishment prior to October. P23B will be subject to either re-seeding or re-turfing. Components of P08A will not be restored until the month of October. However, no construction activities will take place on SWBGS sites in the non-breeding winter season so that visual and noise disturbance associated with these will not impact brent geese. While no data has been located that shows arrival dates at Farlington or the wider SPA it can be expected that smaller numbers will be present in October (and indeed March during their departure). National census data gathered by the British Trust for Ornithology (BTO) through their Wetland Bird Survey (WeBS) Scheme shows that numbers present in England during October are approximately 30% of those during the peak month of January. Additional important factors to consider include the amount of habitat that will require restoration in October and the proportion that it is of the SWBGS sites and the wider network. The October restoration area accounts for: 12 % of the P08A SWBGS, 1.2 % of SWBGS core sites and 0.2 % of the entire SWBGS network. On this basis, it is determined that the restoration of 1.7 ha during the month of October would not impair the SWBGS network and specifically it would not impact the non-breeding brent goose population. Irrespective of the temporary unavailability of 12% of the SWBGS, brent geese would not be disturbed and therefore the functionality of the P08A SWBGS would not be lost due to the extensive remaining habitat. The temporary habitat loss accounts for just 1.2% of the SWBGS core sites and 0.2% of the SWBGS network. The effect on the supporting habitat is therefore considered to be of a de minimis nature in that no perceptible change to baseline conditions will occur. Brent geese will still be able to utilise the majority of P08A SWBGS, which in itself forms just a small component of the SWBGS network available. This assessment is further supported by the fact that the loss of habitat will be temporary, covering at most 17% of a single non-breeding season and during a period when the majority of the Solent brent goose population would not be present. The P08A SWBGS will be restored it its entirety for in advance of when the peak numbers of geese are present in the region. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).
- d. Routine mitigation measures of standard best practice in terms of pollution prevention measures (see Onshore Outline Construction Environmental Management Plan ('CEMP') (APP-505 Rev004)) will make the likelihood of these events occurring highly unlikely and therefore not resulting in an adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).
- e. Routine mitigation measures of standard best practice in terms of waste management (see Onshore Outline CEMP; APP-505 Rev004) will make the likelihood of these events occurring highly unlikely and therefore not resulting in an adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).

### HRA Integrity Matrix 2D: Chichester and Langstone Harbours SPA (Onshore Ecology – In Combination)

Name of European Site: Chichester and Langstone Harbours SPA (Onshore Ornithology)

**Distance to Proposed Development: 0.1 km** 

						Likely	Effects	of the I	Proposed	d Develor	oment (I	n comb	ination	)				
European site feature	1	sturbar splacer		Lig	ht pollu			direct eff			INIS			idental s	pills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	×a		×a										×d	×d	×d	Хe	×e	×e
Shelduck (W)	×b		×b										×d	×d	×d	×e	×e	×e
Shoveler (W)	×b		×b										×d	×d	×d	×e	×e	Хe
Wigeon (W)	×b		×b										×d	×d	×d	×e	×e	×e
Pintail (W)	×b		×b										×d	×d	×d	Хe	×e	Хe
Teal (W)	×b		×b										×d	×d	×d	×e	×e	×e
Red-breasted merganser (W)																		
Grey plover (W)	×b		×b										×d	×d	×d	×e	×e	×e
Ringed plover (W)													×d	×d	×d	Хe	×e	Хe
Curlew (W)	×b		×b										×d	×d	×d	×e	×e	×e
Bar-tailed godwit (W)	×b		×b										×d	×d	×d	×e	×e	×e
Turnstone (W)													×d	×d	×d	×e	×e	×e
Sanderling (W)													×d	×d	×d	×e	×e	×e
Dunlin (W)													×d	×d	×d	×e	×e	×e
Redshank (W)	×b		×b										×d	×d	×d	×e	×e	×e
Waterfowl assemblage (W)	а		×a										×d	×d	×d	×e	×e	×e
Sandwich tern (B)													×d	×d	×d	×e	×e	×e
Little tern (B)													×d	×d	×d	×e	×e	Хe
Common tern (B)													×d	×d	×d	×e	×e	×e
Supporting habitat: freshwater and coastal grazing marsh							×c		×c				×d	×d	×d	×e	×e	×e

#### **Evidence supporting conclusions:**

a. No construction works will occur in SWBGS sites that lie within the Proposed Developments Order Limits during the winter period October – March, while works that have the potential to produce noise impacts of over 69dbAmax in either SWBGS or the SPA will be restricted during October - March. The SPA is in an urban setting and recent research has established that visual disturbance does not have a significant impact on waterbirds in an estuary close to conurbations (Goss-Custard et al., 2019). The screening at the perimeter of HDD compounds will however reduce visual disturbance to indistinguishable levels regardless of the baseline environment. Potential effects resulting from the limited plans or projects which have temporal and spatial overlap with the Proposed Development (Table 5 within Appendix 3 of the HRA Report APP-491, Rev 006-) are considered to be localised and temporary. The North Portsea Island Coastal Flood Defence Scheme, Phase 4B - Coastline Between Milton Common and Kendall's Wharf Eastern Road (19/01368/FUL) includes a full winter working restriction (October – March) so will not disturb dark-bellied brent goose. Therefore, there is no in combination adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).

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- b. Effects of the construction stage on Chichester and Langstone Harbour SPA and its waterbird features will be avoided by restricting works within the winter season, defined as October to March (the period when SPA birds arrive from their breeding grounds (Snow and Perrins, 1998). Adoption of the Principle 6 which states that wherever possible, percussive piling or works with heavy machinery (i.e. plant resulting in a noise level in excess of 69dbAmax – measured at the sensitive receptor) should be avoided during the bird overwintering period has been undertaken with regards to trenching / road saw and HDD works. All species were found to be restricted to intertidal habitat during baseline surveys of the Proposed Development. Noise effects from both trenching / road saw and HDD works overlaps at 69dbAmax is extremely limited with regards to intertidal habitat of the SPA. Trenching / road saw construction is restricted along Eastern Road because of overlap with SWBGS sites so this section will also not provide any disturbance to adjacent intertidal habitat. The only other section of the route that is restricted by Principle 6 is the section of the Onshore Cable Route from Milton Locks north to the P23B SWBGS Potential effects resulting from the limited plans or projects which have temporal and spatial overlap with the Proposed Development (Appendices 16.15 and 16.16 of the ES) are considered to be localised and temporary. The SPA is in an urban setting and recent research has established that visual disturbance does not have a significant impact on waterbirds in an estuary close to conurbations (Goss-Custard et al., 2019). The screening at the perimeter of HDD compounds will however reduce visual disturbance to indistinguishable levels regardless of the baseline environment. The North Portsea Island Coastal Flood Defence Scheme, Phase 4B - Coastline Between Milton Common and Kendall's Wharf Eastern Road (19/01368/FUL) includes a full winter working restriction (October – March) so will not disturb features of the SPA. Therefore, there is no in combination adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3. Tables 10.2 and 10.4).
- c. No habitat within the SPA/Ramsar site will be lost on either a permanent or temporary basis as a result of onshore construction / decommissioning activities. Several SWBGS sites do however lie within the Order Limits, namely: P08A, P11, P23A, P23B and P23R. Restoration measures will be implemented which require completion and grass sward re-established to provide a suitable food resource by October when brent geese return to the Solent to winter. Components of P08A will not be restored until the month of October. The October restoration area accounts for: 12 % of the P08A SWBGS, 1.2 % of SWBGS core sites and 0.2 % of the entire SWBGS network. On this basis, it is determined that the restoration of 1.7 ha during the month of October would not impair the SWBGS network and specifically it would not impact the non-breeding brent goose population. The effect on the supporting habitat is therefore considered to be of a de minimis nature in that no perceptible change to baseline conditions will occur. Brent geese will still be able to utilise the majority of P08A SWBGS, which in itself forms just a small component of the SWBGS network available. This assessment is further supported by the fact that the loss of habitat will be temporary, covering at most 17% of a single non-breeding season and during a period when the majority of the Solent brent goose population would not be present. The P08A SWBGS will be restored it its entirety for in advance of when the peak numbers of geese are present in the region. Potential effects resulting from the limited plans or projects which have temporal and spatial overlap with the Proposed Development are considered to be localised and temporary. The North Portsea Island Coastal Flood Defence Scheme, Phase 4B - Coastline Between Milton Common and Kendall's Wharf Eastern Road (19/01368/FUL) includes a similar commitment to restore all SWBGS before the non-breeding season (October - March) so will not affect supporting habitat. Therefore, there is no in combination adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).
- d. Routine mitigation measures of standard best practice in terms of pollution prevention measures (see Onshore Outline CEMP; APP-505 Rev004) will make the likelihood of these events occurring highly unlikely. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 5 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).
- e. Routine mitigation measures of standard best practice in terms of waste management (Onshore Outline CEMP; APP-505 Rev004) will make the likelihood of these events occurring highly unlikely. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 5 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.3, Tables 10.2 and 10.4).

## HRA Integrity Matrix 3A: Portsmouth Harbour SPA (Marine Ornithology)

Name of European Site: Portsmouth Harbour SPA (Marine Orn	itholog	ıy)																
Distance to Proposed Development: 4.9 km																		
				Ad	verse	Effect	on Inte	egrity	from tl	ne Pro	posed	Devel	opmer	nt ( <u>Alo</u>	<u>ne</u> )			
European site feature		turband placem		Indir	ect eff	ects	C	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Red-breasted merganser (W)													×a	×a	×a	×a	×a	×a

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Distance to Proposed Development: 4.9 km																		
European site feature	1	turbano placem			verse rect eff	Effect ects		egrity ( Collision		he Pro	posed INIS	Devel		nt ( <u>Alo</u> dental			Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Black-tailed godwit (W)																		
Dunlin (W)																		
Supporting habitat (water column)													×a	×a	×a	×a	×a	Хa
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuals colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediments																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Subtidal mixed sediments																		
Supporting habitat Subtidal mud																		

a. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.7 and 10.9).

## **HRA Integrity Matrix 3B:** Portsmouth Harbour SPA (Marine Ornithology – In Combination)

Name of European Site: Portsmouth Harbour SPA (Mari	ine Ornithology)																	
Distance to Proposed Development: 4.9 km				dverse	e Effec	t on In	ntearity	v from	the Pr	opose	ed Deve	elopme	ent (In	Comb	inatior	<u></u>		
European site feature		urban	ce &		ect eff			Collisio			INIS	<b></b>	,	dental			Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Red-breasted merganser (W)													×a	×a	×a	×a	×a	×a
Black-tailed godwit (W)																		
Dunlin (W)																		

Distance to Proposed Development: 4.9 km																		
European site feature		turband	ce &		e Effect rect eff			<b>/ from</b> Collision		opose	INIS	elopme		Comb dental		<u>1)</u>	Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Supporting habitat (water column)													×a	×a	×a	×a	×a	×a
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuals colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediments																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Subtidal mixed sediments																		
Supporting habitat Subtidal mud																		

a. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore will be no adverse effect on site integrity. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.7 and 10.9).

## HRA Integrity Matrix 3C: Portsmouth Harbour SPA (Onshore Ecology)

Name of European Site: Portsmouth Harb  Distance to Proposed Development: 4.9 k		(Onsh	ore Ecol	ogy)														
					Adver	se Effe	ct on Int	egrity f	rom the	Propos	sed Dev	elopme	nt (Aloi	ne)				
European site feature	1	sturband		Lig	ıht pollut	tion	Ind	irect eff	ects		INIS	•	Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	×a		×а										Хc	×c	Хc	×d	×d	×d
Red-breasted merganser (W)																		
Black-tailed godwit (W)													Хc	×c	Хc	×d	×d	×d
Dunlin (W)													×c	×c	Хc	×d	×d	×d
Supporting habitat: freshwater and grazing marsh							×b		×b				×c	×c	×c	×d	×d	×d

- a. Effects of the construction stage on Chichester and Langstone Harbour SPA and the dark-bellied brent goose and the waterfowl assemblage features will be avoided by restricting works within the winter season, defined as October to March (the period when SPA birds such as dark-bellied brent goose arrive from their breeding grounds (Snow and Perrins, 1998). A detailed overview of the working restrictions were provided in Chapter 16: Onshore Ecology and Appendix 16.14: Winter Working Restriction for Features of Chichester & Langstone Harbours SPA and then subject to revisions following consultation with Natural England which are captured in the updated Outline Onshore Construction Environmental Monitoring Plan (OOCEMP; APP-505). Adoption of Principle 1 (construction works cannot take place in SWBGS) will offset direct effects on those SWBGS sites that lie within the Order Limits as detailed above (as these sites will not be subject to works in the winter period when they are used by SPA birds). Adoption of Principle 6 includes the consideration of both construction noise from trenching / road saw activities and HDD. Trenching / road saw noise at 69dbAmax leads to overlap of varying extents, with fourteen SWBGS sites. Construction work at twelve SWBGS sites is restricted during October March on this basis. In accordance with the requirements of the OOCEMP, screening at least 2 m high around the perimeter of the HDD compounds is required for the purpose of noise mitigation. With the exception of HDD-3 and HDD-6, HDD works will not impact SWBGS following the application of screening which will prevent any noise effects of over 69 dB reaching SWBGS sites. HDD-3 noise levels will not extend beyond the site compound and therefore only impact hardstanding habitat and not effecting the integrity of the SWBGS. Noise levels from HDD-6 marginally overlap with the P23A SWBGS. However, as the HDD compound lies within the SWBGS, it is already subject to Principle 1 so that winter work (October to March inclusive) is restric
- b. No habitat within the SPA/Ramsar site will be lost on either a permanent or temporary basis as a result of onshore construction / decommissioning activities. Several SWBGS sites do however lie within the Order Limits, namely: P08A, P11, P23A, P23B and P23R. Restoration measures will be implemented which require completion and grass sward re-established to provide a suitable food resource by October when brent geese return to the Solent to winter. The choice of restoration approach is primarily dependent on the time available within the summer growing season for implementation. Re-seeding is not likely to be the optimal technique after May so that for any restoration works after this month, re-turfing would be implemented. These measures including details of site preparation, establishment and aftercare are provided in the revised Onshore Outline CEMP. P211, P23A and P23 R will be subject to re-turfing restoration within the appropriate timescales to allow reestablishment prior to October. P23B will be subject to either re-seeding or re-turfing. Components of P08A will not be restored until the month of October. However, no construction activities will take place on SWBGS sites in the non-breeding winter season so that visual and noise disturbance associated with these will not impact brent geese. While no data has been located that shows arrival dates at Farlington or the wider SPA it can be expected that smaller numbers will be present in October (and indeed March during their departure). National census data gathered by the British Trust for Ornithology (BTO) through their Wetland Bird Survey (WeBS) Scheme shows that numbers present in England during October are approximately 30% of those during the peak month of January. Additional important factors to consider include the amount of habitat that will require restoration in October and the proportion that it is of the SWBGS sites and the wider network. The October restoration area accounts for: 12 % of the P08A SWBGS, 1.2 % of SWBGS core sites and 0.2 % of the entire SWBGS network. On this basis, it is determined that the restoration of 1.7 ha during the month of October would not impair the SWBGS network and specifically it would not impact the non-breeding brent goose population. Irrespective of the temporary unavailability of 12% of the SWBGS, brent geese would not be disturbed and therefore the functionality of the P08A SWBGS would not be lost due to the extensive remaining habitat. The temporary habitat loss accounts for just 1.2% of the SWBGS core sites and 0.2% of the SWBGS network. The effect on the supporting habitat is therefore considered to be of a de minimis nature in that no perceptible change to baseline conditions will occur. Brent geese will still be able to utilise the majority of P08A SWBGS, which in itself forms just a small component of the SWBGS network available. This assessment is further supported by the fact that the loss of habitat will be temporary, covering at most 17% of a single non-breeding season and during a period when the majority of the Solent brent goose population would not be present. The P08A SWBGS will be restored it its entirety for in advance of when the peak numbers of geese are present in the region. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.8 and 10.10.
- c. Routine mitigation measures of standard best practice in terms of pollution prevention measures (see Onshore Outline Construction Environmental Management Plan ('CEMP') (APP-505 Rev004)) will make the likelihood of these events occurring highly unlikely and therefore not resulting in an adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.8 and 10.10).
- **d.** Routine mitigation measures of standard best practice in terms of waste management (see Onshore Outline CEMP; APP-505 Rev004) will make the likelihood of these events occurring highly unlikely and therefore not resulting in an adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.8 and 10.10).

## HRA Integrity Matrix 3D: Portsmouth Harbour SPA (Onshore Ecology – In Combination)

Distance to Proposed Development: 4.9 kg	m																	
			•	Adv	verse Ef	ffect on	Integrit	y from t	the Prop	osed D	evelopi	ment (Ir	Comb	ination	)			
European site feature	_	turbanc placem		Lig	ht pollut	tion	Ind	irect effe	ects		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)	×a		×а										ХC	Хc	Хc	×d	×d	×d
Red-breasted merganser (W)																		
Black-tailed godwit (W)													ХC	Хc	Хc	×d	×d	×d
Dunlin (W)													Хc	Хc	Хc	×d	×d	×d
Supporting habitat: freshwater and grazing marsh							×b		×b				×c	×c	×c	×d	×d	×d

#### **Evidence supporting conclusions:**

- a. No construction works will occur in SWBGS sites that lie within the Proposed Developments Order Limits during the winter period October March, while works that have the potential to produce noise impacts of over 69dbAmax in either SWBGS or the SPA will be restricted during October March. Potential effects resulting from the limited plans or projects which have temporal and spatial overlap with the Proposed Development (Appendices 16.15 and 16.16 of the ES) are considered to be localised and temporary. The North Portsea Island Coastal Flood Defence Scheme, Phase 4B Coastline Between Milton Common and Kendall's Wharf Eastern Road (19/01368/FUL) includes a full winter working restriction (October March) so will not disturb dark-bellied brent goose. Potential effects resulting from the limited plans or projects which have temporal and spatial overlap with the Proposed Development (Appendices 16.15 and 16.16 of the ES) are considered to be localised and temporary. The North Portsea Island Coastal Flood Defence Scheme, Phase 4B Coastline Between Milton Common and Kendall's Wharf Eastern Road (19/01368/FUL) includes a full winter working restriction (October March) so will not disturb dark-bellied brent goose. Such restrictions have been adopted by other plans or projects identified as potentially affecting wintering bird features of the SPA or SWBGS. The SPA is in an urban setting and recent research has established that visual disturbance does not have a significant impact on waterbirds in an estuary close to conurbations (Goss-Custard *et al.*, 2019). The screening at the perimeter of HDD compounds will however reduce visual disturbance to indistinguishable levels regardless of the baseline environment. Therefore, there is no in combination adverse effect on site integrity (HRA Report (APP-491, Rev 0063) Section 10.5, Tables 10.8 and 10.10).
- b. No habitat within the SPA/Ramsar site will be lost on either a permanent or temporary basis as a result of onshore construction / decommissioning activities. Several SWBGS sites do however lie within the Order Limits, namely: P08A, P11, P23A, P23B and P23R. Restoration measures will be implemented which require completion and grass sward re-established to provide a suitable food resource by October when brent geese return to the Solent to winter. Components of P08A will not be restored until the month of October. The October restoration area accounts for: 12 % of the P08A SWBGS, 1.2 % of SWBGS core sites and 0.2 % of the entire SWBGS network. On this basis, it is determined that the restoration of 1.7 ha during the month of October would not impair the P08A SWBGS network and specifically it would not impact the non-breeding brent goose population. The effect on the supporting habitat is therefore considered to be of a de minimis nature in that no perceptible change to baseline conditions will occur. Brent geese will still be able to utilise the majority of P08A SWBGS, which in itself forms just a small component of the SWBGS network available. This assessment is further supported by the fact that the loss of habitat will be temporary, covering at most 17% of a single non-breeding season and during a period when the majority of the Solent brent goose population would not be present. The P08A SWBGS will be restored it its entirety for in advance of when the peak numbers of geese are present in the region. Potential effects resulting from the limited plans or projects which have temporal and spatial overlap with the Proposed Development are considered to be localised and temporary. The North Portsea Island Coastal Flood Defence Scheme, Phase 4B Coastline Between Milton Common and Kendall's Wharf Eastern Road (19/01368/FUL) includes a similar commitment to restore all SWBGS before the non-breeding season (October March) so will not result in a loss of supporting habitat. Therefore, there is no in combination
- c. Routine mitigation measures of standard best practice in terms of pollution prevention measures (see Onshore Outline CEMP) will make the likelihood of these events occurring highly unlikely. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When this effect is considered in combination with potential

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- effects resulting from other relevant plans or projects (Table 5 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.8 and 10.10).
- **d.** Routine mitigation measures of standard best practice in terms of waste management (Onshore Outline CEMP) will make the likelihood of these events occurring highly unlikely. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When this effect is considered in combination with potential effects resulting from other relevant plans or projects (Table 5 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.5, Tables 10.8 and 10.10).

## HRA Integrity Matrix 4A: Solent and Southampton Water SPA (Marine Ornithology)

Name of European Site: Solent and Southampton Water SPA	(Marin	e Orni	itholog	y)														
Distance to Proposed Development: 6.6 km																		
				Ad	lverse	Effect	on Int	egrity	from t	he Pro	posed	Devel	opmer	nt ( <u>Alo</u>	<u>ne</u> )			
European site feature	1	turban placen		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Teal (W)																		
Ringed plover (W)																		
Black-tailed godwit (W)																		
Mediterranean gull (B)													×a	×a	×a	×a	×a	×a
Sandwich tern (B)													×a	×a	×a	×a	×a	×a
Little tern (B)													×a	×a	×a	×a	×a	×a
Roseate tern (B)													×a	×a	×a	×a	×a	×a
Common tern (B)													×a	×a	×a	×a	×a	×a
Supporting habitat (water column)													×a	×a	×a	×a	×a	×a
Supporting habitat Coastal lagoons																		
Supporting habitat Coastal reedbeds																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuls colonising mud																		
and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal rocks																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		
Supporting habitat Intertidal rock																		
Supporting habitat Subtidal seagrass beds																		
Supporting habitat Circalittoral rock																		

#### **Evidence supporting conclusions:**

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a. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.6, Tables 10.11 and 10.12).

## HRA Integrity Matrix 4B: Solent and Southampton Water SPA (Marine Ornithology – In Combination)

Name of European Site: Solent and Southampton Water SPA (Marine	Ornith	nology	<b>'</b> )															
Distance to Proposed Development: 6.6 km																		
			Δ	dvers	e Effe	ct on Ir	ntegrity	y from	the Pr	opose	d Dev	elopm	ent ( <u>In</u>	Comb	inatio	<u>n</u> )		
European site feature	1	turbano placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Teal (W)																		
Ringed plover (W)																		
Black-tailed godwit (W)																		
Mediterranean gull (B)													×a	×a	×a	×a	×a	×a
Sandwich tern (B)													×a	×a	×a	×a	×a	×a
Little tern (B)													×a	×a	×a	×a	×a	×a
Roseate tern (B)													×a	×a	×a	×a	×a	×a
Common tern (B)													×a	×a	×a	×a	×a	×a
Supporting habitat (water column)													×a	×a	×a	×a	×a	×a
Supporting habitat Coastal lagoons																		
Supporting habitat Coastal reedbeds																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Salicornia and other annuls colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal rocks																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mixed sediments																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		
Supporting habitat Intertidal rock																		
Supporting habitat Subtidal seagrass beds																		
Supporting habitat Circalittoral rock																		

#### **Evidence supporting conclusions:**

Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore no adverse effect on site integrity. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When these

effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.6, Tables 10.21 and 10.12).

## HRA Integrity Matrix 5A: Pagham Harbour SPA (Marine Ornithology)

Distance to Proposed Development: 9.5 km																		
	<u> </u>			Ad	verse	Effect	on Inte	egrity	from th	ne Pro	posed	Devel	opmen	it (Alo	<u>1e)</u>			
European site feature	1	turbano placem		Indi	rect eff	ects	C	Collisio	n		INIS		Accid	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Ruff (W)																		
Little tern (B)																		
Common tern (B)													×a	×a	×a	×a	×a	×a
Supporting habitat (water column)													×a	×a	×a	×a	×a	×a
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Mediterranean and thermo-Atlantic halophilous scrubs																		
Supporting habitat Salicornia and other annuals colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		

#### **Evidence supporting conclusions:**

a. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.7, Tables 10.13 and 10.14).

## HRA Integrity Matrix 5B: Pagham Harbour SPA (Marine Ornithology – In Combination)

Distance to Proposed Development: 9.5 km																		
				dverse	e Effec	t on Ir	tegrity	y from	the Pr	opose	d Deve	elopme	ent ( <u>In</u>	Comb	ination	<u>ı)</u>		
European site feature		urban olacem		Indii	rect eff	ects	C	Collisio	n		INIS		Accid	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Dark-bellied brent goose (W)																		
Ruff (W)																		
Little tern (B)																		
Common tern (B)											×a							
Supporting habitat (water column)										×a	×a	×a	×a	×a				
Supporting habitat Coastal lagoons																		
Supporting habitat Freshwater and coastal grazing marsh																		
Supporting habitat Mediterranean and thermo-Atlantic halophilous scrubs																		
Supporting habitat Salicornia and other annuals colonising mud and sand																		
Supporting habitat Atlantic salt meadows																		
Supporting habitat Spartina swards																		
Supporting habitat Intertidal seagrass beds																		
Supporting habitat Intertidal coarse sediment																		
Supporting habitat Intertidal mud																		
Supporting habitat Intertidal sand and muddy sand																		

#### **Evidence supporting conclusions:**

a. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore no adverse effect on site integrity. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.7, Tables 10.13 and 10.14).

## HRA Integrity Matrix 6A: Littoral Seino-Marin SPA (Marine Ornithology)

Name of European Site: Littoral S	Seino-N	larin S	SPA (M	arine (	Ornitho	ology)												
Distance to Proposed Developme	ent: 30.	6 km																
				Ad	verse	<b>Effect</b>	on Int	egrity	from t	he Pro	posed	Devel	opmer	nt (Alo	<u>ne</u> )			
European site feature	1	Adverse Effect on Integrity from the Proposed Development (Alone)  Disturbance & displacement Indirect effects Collision INIS Accidental spills													spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Greylag goose (W)																		

Name of European Site: Littoral  Distance to Proposed Developn			'' '' (IVI	ai ii ie (	J1111111	ology)												
Distance to 1 roposed bevelopin		U KIII		Ac	lverse	Effect	on Int	earity	from t	he Pro	nosed	Deve	lonmei	nt (Alo	ne)			
<b>F</b>	Dis	turban	ce &									2010		-	-		1.20	
European site feature	l l	placen		Indi	rect eff	rects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
White-fronted goose (W)																		
Shelduck (W)																		
Eider (W)																		
Velvet scoter (W)																		
Common scoter (W)																		
Red-breasted merganser (W)																		
Red-throated diver (W)																		
Black-throated diver (W)																		
Great northern diver (W)																		
Storm petrel (P)																		
Leach's storm petrel (P)																		
Fulmar (B)													×a	×a	×a	×a	×a	×a
Manx shearwater (P)																		
Balearic shearwater (P)																		
Great crested grebe (W)																		
Slavonian grebe (W)																		
Black-necked grebe (P)																		
Spoonbill (W)																		
Little egret (W)																		
Gannet (W)																		
Shag (B)																		
Cormorant (B)																		
Honey buzzard (W)																		
Hen harrier (W)																		
Avocet (W)																		
Purple sandpiper (W)																		
Common sandpiper (W)																		
Kittiwake (B)													×a	×a	×a	×a	×a	Хa
Sabine's gull (P)																		
Little gull (P)																		
Mediterranean gull (W)																		
Lesser black-backed gull (W)																		
Herring gull (B)													×a	×a	×a	×a	×a	×a
Great black-backed gull (B)													×a	×a	×a	×a	×a	×a
Gull-billed tern (P)																		
Sandwich tern (P)																		
Little tern (P)																		

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<b>Distance to Proposed Develo</b>	opment: 30.	6 km																
				Ac	lverse	<b>Effect</b>	on Int	egrity	from t	he Pro	posed	Devel	opmei	nt ( <u>Alo</u>	<u>ne</u> )			
European site feature	<b>I</b>	turban placen		Indi	rect ef	fects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Common tern (P)																		
Arctic tern (P)																		
Great skua (W)																		
Pomarine skua (P)																		
Arctic skua (P)																		
Guillemot (W)																		
Razorbill (W)																		
Short-eared owl (W)																		
Merlin (W)																		
Peregrine (B)																		
Woodlark (W)																		

a. Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.8, Tables 10.15 and 10.16).

## HRA Integrity Matrix 6B: Littoral Seino-Marin SPA (Marine Ornithology – In Combination)

<b>Distance to Proposed Developm</b>	nent: 30.	6 km																
			Α	dvers	e Effe	ct on Ir	ntegrity	y from	the Pr	opose	d Deve	elopme	ent ( <u>In</u>	Comb	inatior	<u>1</u> )		
European site feature		turbano placem		Indi	rect ef	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Greylag goose (W)																		
White-fronted goose (W)																		
Shelduck (W)																		
Eider (W)																		
Velvet scoter (W)																		
Common scoter (W)																		
Red-breasted merganser (W)																		
Red-throated diver (W)																		
Black-throated diver (W)																		
Great northern diver (W)																		

Distance to Proposed Developr	nent: 30.	6 km																
•			A	dvers	e Effe	ct on Ir	ntegrit	y from	the Pr	opose	d Dev	elopm	ent ( <u>In</u>	Comb	<u>inatio</u> i	1)		
European site feature	1	turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Storm petrel (P)																		
Leach's storm petrel (P)																		
Fulmar (B)													×a	×a	×a	×a	×a	×a
Manx shearwater (P)																		
Balearic shearwater (P)																		
Great crested grebe (W)																		
Slavonian grebe (W)																		
Black-necked grebe (P)																		
Spoonbill (W)																		
Little egret (W)																		
Gannet (W)																		
Shag (B)																		
Cormorant (B)																		
Honey buzzard (W)																		
Hen harrier (W)																		
Avocet (W)																		
Purple sandpiper (W)																		
Common sandpiper (W)																		
Kittiwake (B)													×a	×a	×a	×a	×a	×a
Sabine's gull (P)																		
Little gull (P)																		
Mediterranean gull (W)																		
Lesser black-backed gull (W)																		
Herring gull (B)													×a	×a	×a	×a	×a	×a
Great black-backed gull (B)													×a	×a	×a	×a	×a	×a
Gull-billed tern (P)																		
Sandwich tern (P)																		
Little tern (P)																		
Common tern (P)																		
Arctic tern (P)																		
Great skua (W)																		
Pomarine skua (P)																		
Arctic skua (P)																		
Guillemot (W)																		
Razorbill (W)																		
Short-eared owl (W)																		
Merlin (W)																		

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Name of European Site: Littoral S	Seino-N	larin S	PA (Ma	arine C	Ornitho	ology)												
Distance to Proposed Developme	nt: 30.	6 km																
			Α	dvers	e Effec	t on Ir	ntegrity	, from	the Pr	opose	d Dev	elopme	ent ( <u>In</u>	Comb	inatior	<u>1</u> )		
European site feature	_	turband placem		Indi	rect eff	ects	(	Collisio	n		INIS		Acci	dental	spills		Litter	
	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Peregrine (B)																		
Woodlark (W)																		

Routine mitigation measures of standard best practice in terms of waste management, pollution prevention measures and strict navigational protocols will prevent these events occurring and therefore there is no adverse effect on site integrity. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 4 of Appendix 3) it is concluded that there is no potential for adverse effects on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.8, Tables 10.15 and 10.16).

### **Integrity Matrix 7: Solent Maritime SAC (Annex I Habitat Features)**

Name of European site and de	signati	on: S	olent	Marit	ime S	SAC																		
EU Code: UK0030059																								
Distance to Proposed Develop	ment: (	) km																						
European site features								Adve	rse Ef	fect o	n Int	egrity	from	the Pr	opos	ed Dev	elopme	ent						
Effect	1	crease smoth	ed nering	1	ntamir edime		1	Habita rbanc	nt e/loss	, ,	rodyn hange	amic es	Invasi	ve spe	ecies	Poll	ution ev	rents	EMF/	Tempe	erature		In nbina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Estuaries [1130]	×a	×b	×a										Хc	×c	Хc	×d	×d	×d				Хe	Хe	Хe
Mudflats and sandflats (not submerged at low tide) [1140]	×a	×b	×a										×c	×c	×c	×d	×d	×d				×е	×е	×е
Sandbanks (slightly covered by seawater all the time) [1110]	×a	×b	×a										×c	×c	×c	×d	×d	×d				×е	×е	×е
Spartina swards [1320]	×a	×b	×a										×c	×c	ХC	×d	×d	×d				Хe	Хe	Хe
Atlantic salt meadows [1330]	×a	×b	×a										×c	×c	ХC	×d	×d	×d				Хe	Хe	Хe
Salicornia and other annuals colonising mud and sand [1310]	×a	×b	×a										×c	×c	×c	×d	×d	×d				×е	×е	×e
Shifting dunes along the shoreline [2120]																								
Coastal lagoons [1150]																								
Annual vegetation of drift lines [1210]																								
Perennial vegetation of stony banks [1220]																								
Desmoulin's whorl snail ( <i>Vertigo moulinsiana</i> ) [1016]																								

#### **Evidence supporting conclusions:**

- a. Due to the potential for high levels of sediment deposition within the SAC as a result of sediment disposal activities, it was considered that LSE could not be ruled out for any connected feature (HRA Report APP-491, Rev 006, Section 7.2.1). It has been determined that adverse effects as a result of sediment disposal can be avoided through mitigation. It is proposed that sediment disposal activities be restricted to outwith Water Framework Directive (WFD) waters (plus a buffer of 3 km). Modelling indicates that this mitigation will result in no connectivity between SAC features and sediment disposal activities, and therefore no potential for adverse effects on site integrity. Normal cable construction activities (excluding dredged sediment deposition) will take place at a minimum distance of 0.24 km from SAC features and are likely to result in light, temporary deposits only which are anticipated to be removed within a few tide cycles as a result of tidal forcing, therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.10, Tables 10.17 and 10.18).
- **b.** Operation effects are expected to be less than or equal to construction. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.10, Tables 10.19 and 10.20).
- c. Adoption of routine best practice management measures for prevention of INIS will ensure that the risk of introduction of such species is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a biosecurity plan (as part of the CEMP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.10, Tables 10.19 and 10.20).
- d. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.10, Tables 10.19 and 10.20).
- e. Given the very small (e.g. within natural background of variation for SSC) and localised potential effects resulting from the Proposed Development, the temporary nature of effects, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude (coupled with the fact that best practice measures will be in place for both INIS and pollution), when these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 1 of Appendix 3) it is considered that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.10, Tables 10.19 and 10.20).

### HRA Integrity Matrix 8: South Wight Maritime SAC (Annex I Habitat Features)

Name of Europ	oean si	ite and	d desi	gnatio	n: Sc	outh W	ight N	/lariti	me S	AC														
EU Code: UK0	030061	1																						
Distance to Pr	opose	d Dev	elopm	ent: 3	3.3 km	l																		
European site features								Adve	erse E	Effect	on In	ntegrit	y from	the P	ropose	d Deve	lopmei	nt						
Effect	1	crease/smoth			Habita Irbanc	et e/loss		tamin dimer		1	rodyn hange		Inva	sive sp	ecies	Polli	ution ev	rents	EMF/	Tempe	erature	I	In nbina effect	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Reefs [1170]	×a	×b	×a										×c	×c	×c	×d	×d	×d				×e	×e	×e
Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230]																								
Submerged or partially submerged sea caves [8330]	×a	×b	×a										×c	×c	×c	×d	×d	×d				×е	×e	×е

#### **Evidence supporting conclusions:**

a. Due to the potential for sediment deposition within the SAC, it was considered that LSE could not be ruled out for any connected feature as a result of sediment disposal or cable installation activities (HRA Report APP-491, Rev 006, Section 7.2.1). It has been determined that adverse effects as a result of sediment disposal can be avoided through mitigation. It is proposed that sediment disposal activities be restricted to outwith Water Framework Directive (WFD) waters (plus a buffer of 3 km). Modelling indicates that this mitigation will result in no connectivity between SAC features and sediment disposal activities, and therefore no potential for adverse effects on site integrity can arise. Normal cable construction activities (excluding dredged sediment

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- deposition) will take place at a minimum distance of 3.3 km from SAC features and will not result in any deposits other than very light temporary settlement which would be removed under normal tidal forcing, therefore there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.11, Tables 10.22).
- **b.** Operation effects are expected to be less than or equal to construction. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.11, Tables 10.21 and 10.22).
- c. Adoption of routine best practice management measures for prevention of INIS will ensure that the risk of introduction of such species is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a biosecurity plan (as part of the CEMP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.11, Tables 10.21 and 10.22).
- d. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.11, Tables 10.21 and 10.22).
- e. Given the very small (e.g. within natural background of variation for SSC) and localised potential effects resulting from the Proposed Development, the temporary nature of effects, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude (coupled with the fact that best practice measures will be in place for both INIS and pollution) when these effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 1 of Appendix 3) it is considered that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.11, Tables 10.21 and 10.22).

## HRA Integrity Matrix 9: River Itchen SAC (Fish)

Name of European site and designation: River I	tche	n SA	AC (Fis	sh)																							
EU Code: UK0012599																											
Distance to Proposed Development: 27.5 km																											
European site features							,	Adv	erse	e Eff	ect	on I	nteg	grity	froi	n th	e Pr	opose	d D	evel	lopr	nen	t				
Effect	Inc SS	creas SC	sed		ysic ury	al	ı	asiv ecies		l	llutic ents		1	ise a oratio		1	sual sturb	ance	ΕN	1F			empe ange	erature es		comi ects	bination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1106 Atlantic salmon (Salmo salar)	X a	×	×a							b	X b	X b													X C	C	×c
1044 Southern damselfly (Coenagrion mercurial)																											
1163 Bullhead (Cottus gobio)																											
1092 White-clawed (or Atlantic stream) crayfish																											
1096 Brook lamprey (Lampetra planeri)																											
1355 Otter (Lutra lutra)																											
3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation																											

**Evidence supporting conclusions:** 

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- **a.** Both salmon and smolts are inherently tolerant of naturally high and variable levels of SSC given that they spawn in riverine environments and are frequently exposed to increases in SSC from flood events and land run off. In addition, both salmon life stages are highly mobile so can navigate round or through areas of elevated SSC. Therefore, there will be no adverse effects on site integrity (HRA Report (APP-491, Rev 006) Section 10.12, Tables 10.23 and 10.24).
- **b.** Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.12, Tables 10.23 and 10.24).
- c. Considering the very small (e.g. within natural background of variation for SSC) and localised potential effect resulting from the Proposed Development, its temporary nature, and the fact that any other activities resulting from relevant projects and plans which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination. Similarly for pollution effects, the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.12, Tables 10.23 and 10.24).

#### HRA Integrity Matrix 10: River Avon SAC (Fish)

Name of European site and designation: River	Avon	SA	C (F	ish)																								
EU Code: UK0013016																												
Distance to Proposed Development: 51.4 km																												
European site features								A	dver	se E	Effe	ct o	n Ir	nteg	rity	/ fro	m th	e P	ropos	ed C	)eve	lop	mer	nt				
Effect	Inc	crea: SC	sed		ysic ury	al	1	vasi ecie		ı	lluti		- 1	Voise vibra			ı	ual sturb	ance	E٨	ΛF			empe	erature es		com fects	bination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D			)	D	С	0	D	С	0	D	С	0	D	С	0	D
1095 Sea lamprey (Petromyzon marinus)	X a	X a	X a							X b	X b	X b														X C	X C	×c
1106 Atlantic salmon	X a	X a	X a							X b	X b	X b														X C	X C	×c
1016 Desmoulin's whorl snail (Vertigo moulinsiana)																												
1096 Brook lamprey																												
1163 Bullhead																												
3260 Water courses of plain to montane levels with the Ranunclion fluitantis and Callitricho-Batrachion vegetation																												

#### **Evidence supporting conclusions:**

a. Both salmon (and smolts) and sea lamprey (and transformers) are inherently tolerant of naturally high and variable levels of SSC given that they spawn in riverine environments and are frequently exposed to increases in SSC from flood events and land run off. In addition, salmon and sea lamprey are highly mobile so can navigate round or through areas of elevated SSC. Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.13, Tables 10.25 and 10.26).

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- b. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.13, Tables 10.25 and 10.26).
- c. Considering the very small (e.g. within natural background of variation for SSC) and localised potential effect resulting from the Proposed Development, its temporary nature, and the fact that any other activities resulting from relevant projects and plans which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effects on site integrity in combination. Similarly for pollution effects, the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.13, Tables 10.25 and 10.26).

### HRA Integrity Matrix 11: River Axe SAC (Fish)

Name of European site and designation: River	Axe S	AC	(Fis	h)																							
EU Code: UK0030248			-	-																							
Distance to Proposed Development: 168 km																											
European site features								Ad	vers	e Ef	ffect	on	Inte	grity	y fron	n the	e Pro	opose	d De	evel	opn	nent					
Effect	Inc SS	reas C	sed	Ph <sub>.</sub> Inju	ysica ury	al		asiv ecie:		l	llutio ents		1	ise a ratio			ual turb	ance	ΕM	1F			mpei ange	rature s		mbin ects	nation
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1095 Sea lamprey										× a	X a	× a													X b	X b	×b
1096 Brook lamprey																											
1163 Bullhead																											
3260 Water courses of plain to montane levels with the Ranunclion fluitantis and Callitricho-Batrachion vegetation																											

#### **Evidence supporting conclusions:**

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.14, Table 10.28).
- b. Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.14, Table 10.28).

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## HRA Integrity Matrix 12: Plymouth Sound and Estuaries SAC (Fish)

Name of European site and designation: Plymou	th S	our	ıd aı	nd E	stu	aries	s SA	\C (I	Fish	)																	
EU Code: UK0030248																											
Distance to Proposed Development: 229 km																											
European site features								A	dver	rse l	Effe	ct o	n In	tegr	ity fro	om t	he P	ropos	sed [	Deve	elop	mer	nt				
Effect	Inc SS	reas C	sed		ysic ury	al	1	/asiv		1	llutio ents		1	oise oratio	and on		ual sturb	ance	EN	1F			mpe ange	rature es	1	comb ects	bination
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С		D
1102 Allis shad (Alosa alosa)										x a	X a	×													X  b	X b	×b
1110 Sandbanks which are slightly covered by sea water all the time																											
1130 Estuaries																											
1160 Large shallow inlets and bays																											
1170 Reefs																											
1330 Atlantic salt meadows (Glauco- Puccinellietalia maritimae)																											
1140 Mudflats and sandflats not covered by seawater at low tide																											
1441 Shore dock																											

- **a.** Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.15, Table 10.30).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.15, Table 10.30).

# HRA Integrity Matrix 13: Estuaires et Littoral Picards (Baies de Somme et d'Authie) SAC (Fish)

Name of European site and designation: Estuaries et Littora	ıl Pic	ards	(Ba	ie de	Som	me (	et d'	Aut	hie)	SA	C (fi	sh)														
EU Code: FR2200346						_																				
Distance to Proposed Development: 84.6 km																										
European site features							Adv	erse	Eff	ect	on I	nteg	rity	from t	he Pr	opc	sed D	)eve	lopn	nen	t					
Effect	SS		1.	Physic njury		spe	asive ecies	3	eve	llutio ents		Noi vibi	ratio	n		turb	ance	ΕN			cha	ange		on eff	ects	
Stage of Development	С	0	$D \mid C$	0 0	D	С	0	D	С			С	0	D	С	0	D	С	0	D	С	0	D	С		D
1099 River lamprey									x a	X a														X b	X b	x b
1166 Crested newt																										
1614 Creeping marshwort (Apium repens)																										
1903 Fen Orchid (Liparis Ioeselii)																										
6199 Jersey Tigar																										
1042 Yellow-spotted Whiteface (Leucorrhinia pectotalis)																										
1014 Narrow-mouthed whorl snail (Vertigo angustior)																										
1016 Desmoulin's whorl snail																										
1364 Grey seal																										
1321 Geoffroy's bat																										
1365 Common seal																										
1351 Common Porpoise																										
1349 Bottle-nosed Dolphin																										
1110 Sandbanks which are slighty covered by seawater all the																										
time																										
1130 Estuaries																										
1140 Mudflats and sandflats not covered by seawater at low																										
tide																										
1150 Coastal lagoons																										
1170 Reefs																										
1210 Annual vegetation of drift lines																										
1220 Perennial vegetation of stony banks																										
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts																										
1310 Salicornia and other annuals colonizing mud and sand																										
1330 Atlantic salt meadows (Glauco-Puccinellietalia																										
maritimae)																										
1420 Mediterranean and thermos-Atlantic halophilous scrubs																										
(Sarcocornetea fructicosi)																										
2130 Embryonic shifting dunes																										

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EU Code: FR2200346																											
Distance to Proposed Development: 84.6 km																											
European site features								Adv	erse	e Eff	fect	on l	Inte	grity	from t	he P	ropo	sed D	)eve	lopr	nen	t					
Effect	Inc SS	reas C	sed	Ph <u>j</u> Inju	ysica ury	al		asive ecies			llutic ents			oise a			sual sturb	ance	ΕΛ	ΛF			mpe ange	rature s	on	mbin ects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D		0	
2120 Shifting dunes along the shoreline with Ammophila arenaria ('white dunes')																											
2130 Fixed coastal dunes with herbacceous vegetation ('grey dunes')																											
2160 Dunes with Hippophae rhamnoides																											
2170 Dunes with Salix repens ssp argentea (Salicion arenariae)																											
2180 Wooded dunes of the Atlantic, Continental and Boreal region																											
2190 Humid dune slacks																											
3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)																											
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp																											
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation																											
3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation																											
6410 Molinia meadows on calcareous, peaty or clayey-silt- laden soils (Molinion caeruleae)																											
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels																											
6510 Lowland hay meadows (Alopecurus prtensis, Sanguisorba officinalis)																											
7230 Alkine fens																											
91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)																											

a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.17, Table 10.37).

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**b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.17, Table 10.37).

## HRA Integrity Matrix 14: Baie de Canche et Couloir des trois Estuaires SAC (Fish)

Name of European site and designation: Baie de Canche e	t Co	uloi	ir de	s tro	ois I	Estu	aire	s SA	AC																		
EU Code: FR3102005																											
Distance to Proposed Development: 86.5 km																											
European site features								A	Adve	erse	Effe	ect o	on Ir	ntegi	rity fro	om tl	ne P	ropos	ed [	Deve	elop	men	ıt				
Effect	Inc SS	reas C	sed	Ph <sub>.</sub> Inju	ysic ury	al	ı	asiv ecies	- 1		llutic ents		_	ise a ratio	-	1	ual turb	ance	EM	1F			mpe ange	rature es		comb ects	bination
Stage of Development	С	0	D	С	0	D	С	0		С		D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1102 Allis shad										x a	× a	x a													X b	X b	×b
1095 Sea lamprey										x a	× a	x a													X b	×b	×b
1099 River lamprey										x a	x a	x a													X b	X b	×b
1106 Atlantic salmon										x a	x a	x a													X b	X b	×b
1351 Harbour porpoise																											
1364 Grey seal																											
1365 Harbour seal																											
1110 Sandbanks which are slightly covered by sea water all the time																											
1130 Estuaries																											
1140 Mudflats and sandflats not covered by seawater at low tide																											
1210 Annual vegetation of drift lines																											
1310 Salicornia and other annuals colonising mud and sand																											
1330 Atlantic salt meadows																											

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.18, Table 10.41).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.18, Table 10.41).

## HRA Integrity Matrix 15: Baie de Seine Orientale SAC (Fish)

Name of European site and designation: Baie de Seine O	rien	tale	SAG	C (fi	sh)																						
EU Code: FR2502021																											
Distance to Proposed Development: 90.9 km	_																										
European site features									Adv	erse	e Eff	ect	on I	nteg	grity fro	m th	ne Pi	ropos	ed D	eve	lopr	nen	t				
Effect		crea: SC	sed		ysica ury	al	1	asiv			llutic ents			ise a			sual sturb	ance	Eλ	1F			mpe ange	rature s		com	bination
Stage of Development	С	_	D	C	Ó	D	C	0		С	0	D	С						С	0	D	С			С		D
1102 Allis shad										X a	X a	X d													X b	X b	×b
1103 Twaite shad										× a	× a	× a													X b	X b	×b
1095 Sea lamprey										X a	x a	x a													X b	X b	×b
1099 River lamprey										X a	х а	х а													X b	X b	×b
1106 Atlantic salmon										X a	X a	x a													X b	X b	×b
1351 Harbour porpoise																											
1364 Grey seal																											
1365 Harbour seal																											
1349 Bottlenose dolphin																											
1110 Sandbanks which are slightly covered by sea water all the time																											
1160 Large shallow inlets and bays																											
1170 Reefs																											
1210 Annual vegetation of drift lines																											
1310 Salicornia and other annuals colonising mud and sand																											
1330 Atlantic salt meadows																											

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.19, Table 10.45).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.19, Table 10.45).

# HRA Integrity Matrix 16: Littoral Cauchois SAC (Fish)

Name of European site and designation: Littoral Cauchois	s SAC	C (fi	sh)																							
EU Code: FR2300139																										
Distance to Proposed Development: 52.7 km	1																									
European site features							Ad	vers	e Ef	fec	t on	Inte	grity	/ from	the	Pro	pose	ed D	)eve	lopr	nen	t				
Effect	Inc SS	reas	sed	Phy Inju	vsical Iry	1	Invasi specie		1	olluti			oise bratio			sual sturk		EΛ	ЛF			mpe ange	rature s		mbir	nation
Stage of Development	С	0	D	С	0	D	СО	D	С	0	D	С	0	D	C		D	С	0	D	С	0	D	C	0	D
1103 Twaite shad (Alosa fallax)									X a		×													X b	X b	×b
1099 River lamprey (Lampetra fluviatilis)									X a	X a	а													X b	X b	×b
1095 Sea lamprey									x a	x a														X   b	X b	×b
1166 Crested newt (triturus cristatus)																										
1163 Freshwater sculpin (Cottus gobio)																										
1044 Southern coenagrion																										
6199 Jersey tiger (Euplagia quadripunctaria)																										
1083 Stag beatle (Lucanus cervus)																										
1308 Barbastelle (barbastelle barbastellus)																										
1364 Grey seal (Halichoerus grypus)																										
1323 Bechsteins bat (Myotis bechsteinii)																										
1321 Geoffroy's bat (Myotis emarginatus)																										
1324 Greater mouse-eared bat (Myotis myotis)																										
1365 Harbour seal (Phoca vitulina)																										
1351 Common Porpoise (Phocoena phocoena)																										
1304 Greater horseshoe bat (Rhinolophus ferrumequinum)																										
1303 Lesser horseshoe bat (Rhinolophus hipposideros)																										
1349 Bottle-nosed Dolphin (Tursiops truncatus)																										
1170 Reefs																										
1220 Perennial vegetation of stony banks																										
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts																										
3110 Oligatrophic waters containing very few minerals of																										
sandy plains (littorelletalia uniflorae)																										
3140 Hard oligo-mesotrophic waters with benthic vegetation																										
of Chara spp																										
3150 Natural eutrophic lakes and Magnopotamion or Hydrocharition – type vegetation																										

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Name of European site and designation: Littoral Cauchois	SA	C (fi	sh)																							
EU Code: FR2300139		•																								
Distance to Proposed Development: 52.7 km																										
European site features							A	dver	se E	ffe	ct on	Inte	egrit	y fron	n the	Pro	pose	ed D	eve	lopn	nent	t				
Effect	Ind SS	creas SC	sed	Ph <u>j</u> Inju	ysic ıry	al	Inva spec		- 1	ollu ven	tion ts	- 1	loise ibrati				ban	EM	1F			mpei ange	rature s		mbir ects	ation
Stage of Development	С	0	D	С	0	D	С	0 D	) C	; (	) D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
4020 Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix									Т			Г			П											
4030 European dry heaths																										
6410 Molina meadows on calcareous, peaty or clayey-silt- laden soils (Molinion caeruleae)															Т											
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels																										
6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)																										
7220 Petrifying springs with tufa formation (Cratoneurion) 7230 Alkaline fens																										
8310 Caves not open to the public		$\vdash$						+	+	+	+	۲	+													
9120 Atlantic acidophilous beech forests with llex and sometimes also Taxus in shrublayer (Quercion roboripetraeae or Ilici-fagenion)																										
9130 Asperulo-Fagetum beech forests																										
9180 Tilio-Acerion forests of slopes, screes and ravines																										
9190 Old acidophilous oak woods with Quercus rubur on sandy plains																										
91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)																										

- **a.** Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.16, Table 10.33).
- b. Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude as similar best practice pollution measures are employed for the other plans and projects, it is concluded that there is no potential for adverse effect on site integrity in combination with other projects and plans (HRA Report (APP-491, Rev 006) Section 10.16, Table 10.33).

# HRA Integrity Matrix 17: Estuaires et littoral picards (baies de Somme et d'Authie) SAC (Marine Mammals)

Name of European site and designation: Estuaires et l	ittoral	picards	(baies	de Sor	nme et	d'Auth	nie) SAC	(Marine	e Mamr	nals)								
EU Code: FR2200346																		
Distance to Proposed Development: 87 km																		
European site features								ct on In					velopm			,		
Effect	Au	iditory in	jury	Di	sturbar	nce		Collision		Ina	lirect effe	ects		Pollution	1	In com	bination	effects
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin													×a	×a	×a	×b	×b	×b
1351 Harbour porpoise													×a	×a	×a	×b	×b	×b
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1614 Apium repens																		
6199 Euplagia quadripunctaria																		
1099 Lampetra fluviatilis																		
1042 Leucorrhinia pectoralis																		
1903 Liparis loeselii																		
1321 Myotis emarginatus																		
1166 Triturus cristatus																		
1014 Vertigo angustior																		
1016 Vertigo moulinsiana																		
1110 Sandbanks which are slightly covered by sea water																		
all the time																		
1130 Estuaries																		
1140 Mudflats and sandflats not covered by seawater at																		
low tide																		
1150 Coastal lagoons																		
1170 Reefs																		
1210 Annual vegetation of drift lines																		
1220 Perennial vegetation of stony banks																		
1230 Vegetated sea cliffs of the Atlantic and Baltic																		
Coasts																		
1310 Salicornia and other annuals colonizing mud and																		
sand																		
1330 Atlantic salt meadows (Glauco-Puccinellietalia																		
maritimae)																		
1420 Mediterranean and thermo-Atlantic halophilous																		
scrubs (Sarcocornetea fruticosi)																		
2110 Embryonic shifting dunes																		
2120 Shifting dunes along the shoreline with Ammophila																		
arenaria ("white dunes")																		
2130 Fixed coastal dunes with herbaceous vegetation																		
("grey dunes")																		
2160 Dunes with Hippophaë rhamnoides																		

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Name of European site and designation: Estuaires et I EU Code: FR2200346	ittorar	piourus	(baics	uc 001		t a Aati	iio, one	/ (Marini	o mann	iiai3)								
Distance to Proposed Development: 87 km																		
European site features						Adve	rse Effe	ct on In	tearity	from th	e Propo	sed De	evelopm	nent				
Effect	Au	ditory in	iury	D	isturbai			Collision			lirect effe			Pollutio	n	In com	bination	effects
Stage of Development	С	Ó	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
2170 Dunes with Salix repens ssp. argentea (Salicion																		
arenariae)																		
2180 Wooded dunes of the Atlantic, Continental and																		
Boreal region																		
2190 Humid dune slacks																		
3110 Oligotrophic waters containing very few minerals of																		
sandy plains (Littorelletalia uniflorae)																		
3140 Hard oligo-mesotrophic waters with benthic																		
vegetation of Chara spp.																		
3150 Natural eutrophic lakes with Magnopotamion or																		
Hydrocharition - type vegetation																		
3260 Water courses of plain to montane levels with the																		
Ranunculion fluitantis and Callitricho-Batrachion																		
vegetation																		
6410 Molinia meadows on calcareous, peaty or clayey-																		
silt-laden soils (Molinion caeruleae)																		
6430 Hydrophilous tall herb fringe communities of plains																		
and of the montane to alpine levels																		
6510 Lowland hay meadows (Alopecurus pratensis,																		
Sanguisorba officinalis)																		
7230 Alkaline fens																		
91E0 Alluvial forests with Alnus glutinosa and Fraxinus																		
excelsior (Alno-Padion, Alnion incanae, Salicion albae)																		

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.17, Table 10.38).
- b. Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.17, Table 10.38).

## HRA Integrity Matrix 18: Baie de Canche et couloir des trois estuaires SAC (Marine Mammals)

Name of European site and des	ignation:	Baie de	Canche e	t couloir	des trois	estuaire	es SAC (N	Marine Ma	mmals)									
EU Code: FR3102005							-											
Distance to Proposed Developm	nent: 85 l	km																
European site features						Adve	rse Effect	on Integr	ity from	the Prop	osed Dev	elopme	nt					
Effect	Αι	uditory inju	iry	D	isturbance	)		Collision		Ind	direct effec	ets		Pollution		In o	combina: effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1351 Harbour porpoise													×a	×a	×a	×b	×b	×b
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1095 Sea lamprey																		
1099 River lamprey																		
1102 Allis shad																		
1106 Atlantic salmon																		
1110 Sandbanks which are																		
slightly covered by sea water all																		
the time																		
1130 Estuaries																		
1140 Mudflats and sandflats not																		
covered by seawater at low tide																		
1210 Annual vegetation of drift																		
lines																		
1310 Salicornia and other																		
annuals colonising mud and																		
sand																		
1330 Atlantic salt meadows																		

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.18.4, Table 10.40).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.18.4, Table 10.40).

## HRA Integrity Matrix 19: Baie de Seine Orientale SAC (Marine Mammals)

EU Code: FR2502021 Distance to Proposed Developm	ent: 91 k	m																
Distance to 1 roposed beveloping	ieiit. 31 K																	
European site features						Adverse	Effect o	n Integr	ity from	the Propo	osed Deve	lopment						
Effect	Αι	uditory in	jury	D	isturband	ce		Collision		Ir	ndirect effe	cts	,	Pollution			ombina effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin													×a	×a	×a	×b	×b	×b
1351 Harbour porpoise													×a	×a	×a	×b	×b	×b
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1095 Sea lamprey																		
1099 River lamprey																		
1102 Allis shad																		
1103 Twaite shad																		
1106 Atlantic salmon																		
1110 Sandbanks which are																		
slightly covered by sea water all the time																		
1160 Large shallow inlets and bays																		

### **Evidence supporting conclusions:**

1170 Reefs

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.19.4, Table 10.44).
- b. Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.19.4, Table 10.44).

# HRA Integrity Matrix 20: Littoral Cauchois SAC (Marine Mammals)

Name of European site and designation: Littoral Cauchois SAC (Marine Mammals)

EU Code: FR2300139

Distance to NSIP: 53 km

European site features						Adve	rse Effe	ct on In	tegrity 1	from th	e Prop	osed De	velopn	nent				
Effect	Au	ditory ir	njury	D	isturband	ce		Collision	n	Inc	direct ef	fects		Pollutio	n	In com	bination	effects
Stage of Development	С	Ö	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1349 Bottlenose dolphin													×a	×a	×a	×b	×b	×b
1351 Harbour porpoise													×a	×a	×a	×b	×b	×b
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1103 Alosa fallax																		
1308 Barbastella barbastellus																		
1044 Coenagrion mercurial																		
1163 Cottus gobio																		
6199 Euplagia quadripunctaria																		
1099 Lampetra fluviatilis																		
1083 Lucanus cervus																		
1323 Myotis bechsteinii																		
1321 Myotis emarginatus																		
1324 Myotis myotis																		
1095 Petromyzon marinus																		
1304 Rhinolophus ferrumequinum																		
1303 Rhinolophus hipposideros																		
1166 Triturus cristatus																		
1170 Reefs																		
1220 Perennial vegetation of stony banks																		
1230 Vegetated sea cliffs of the Atlantic and Baltic																		
Coasts																		
3110 Oligotrophic waters containing very few																		
minerals of sandy plains (Littorelletalia uniflorae)																		
3140 Hard oligo-mesotrophic waters with benthic																		
vegetation of Chara spp.																		
3150 Natural eutrophic lakes with Magnopotamion or																		
Hydrocharition - type vegetation																		
4020 Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix																		
4030 European dry heaths																		

Name of European site and designation: Littoral Ca	uchois	SAC (	(Marine	Mamm	als)													
EU Code: FR2300139																		
Distance to NSIP: 53 km																		
European site features						Adve	rse Effe	ct on In	tegrity	from th	e Propo	osed De	velopr	nent				
Effect	Au	ditory ii	njury		Disturban	се		Collisio	n	Inc	direct ef	fects		Pollutio	n	In com	nbination (	effects
Stage of Development	С	O	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)																		
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels																		
6510 Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)																		
7220 Petrifying springs with tufa formation (Cratoneurion)																		
7230 Alkaline fens																		
8310 Caves not open to the public																		
9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)																		
9130 Asperulo-Fagetum beech forests																		
9180 Tilio-Acerion forests of slopes, screes and ravines																		
9190 Old acidophilous oak woods with Quercus robur on sandy plains																		
91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae,																		

Salicion albae)

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.16.4, Table 10.34).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.16.4, Table 10.34).

## HRA Integrity Matrix 21: Récifs Gris-Nez Blanc-Nez SAC (Marine Mammals)

Name of European s	ite and de	esignation	n: Récifs	Gris-Nez	Blanc-Ne	z SAC (Ma	arine Man	nmals)										
EU Code: FR3102003	3																	
<b>Distance to Propose</b>	d Develop	oment: 10	4 km															
European site						Ad	verse Eff	ect on Int	tegrity fro	m the Pro	posed D	evelopme	ent					
features	Auditory injury Disturbance Collision Indirect effects Pollution In combination effect																	
Effect	Auditory injury         Disturbance         Collision         Indirect effects         Pollution         In combination effects           C         O         D															effects		
Stage of	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Development																		
1351 Harbour													×a	×a	×a	×b	×b	×b
porpoise													^a	^a	^a	^0	<b>^</b> D	<b>~</b> D
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1110 Sandbanks																		
which are slightly																		
covered by sea																		
water all the time																		
1170 Reefs																		

## **Evidence supporting conclusions:**

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.22.3, Table 10.54).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.22.3, Table 10.54).

# HRA Integrity Matrix 22: Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC (Marine Mammals)

EU Code: FR3102004	ļ																	
Distance to Propose	d Develop	pment: 59	) km															
European site features						Ad	dverse Eff	fect on Int	egrity fro	m the Pr	oposed D	evelopm	ent					
Effect	A	uditory inju	ury		Disturband	е		Collision		In	direct effe	cts		Pollution		In con	nbination	effects
Stage of	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Development																		
1351 Harbour													×a	×a	×a	×b	×b	×b
porpoise													^a	<b>^</b> a	<b>^</b> a	<b>^</b> b	<b>^</b> D	<b>^</b> b
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1110 Sandbanks																		
which are slightly																		

Name of European s	ite and de	esignatio	n: Ridens	et dunes	hydraulio	ques du d	létroit du	Pas-de-C	alais SAC	C (Marine	Mammal	s)						
EU Code: FR3102004	4																	
Distance to Propose	d Develo	pment: 59	) km															
European site						Ad	lverse Eff	fect on In	tegrity fro	m the Pro	oposed D	evelopme	ent					
features		Adverse Effect on Integrity from the Proposed Development  Auditory injury Disturbance Collision Indirect effects Pollution In combination of																
Effect	A	Auditory injury Disturbance Collision Indirect effects Pollution In combination														nbination	effects	
Stage of	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
Development																		
covered by sea																		
water all the time																		
1170 Reefs																		

- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.20.3, Table 10.46).
- **b.** Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.20.3, Table 10.46).

# HRA Integrity Matrix 23: Estuaire de la Seine SAC (Marine Mammals)

Name of European site and designation: Estuain	re de la Seine SAC	C (Mari	ine Mar	mmals)	)													
EU Code: FR2300121																		
Distance to NSIP: 90 km																		
European site features						Ady	verse	Effect o	n Integ	rity fror	n the P	ropose	d Deve	elopme	nt			
Effect	Au	ditory i	injury	Dis	turban	ce		Collision	1	Indi	rect eff	ects		Pollutio	on	In cor	nbination	effects
Stage of Development	C	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1351 Harbour porpoise													×a	×a	×a	×b	×b	×b
1364 Grey seal													×a	×a	×a	×b	×b	×b
1365 Harbour seal													×a	×a	×a	×b	×b	×b
1044 Southern damselfly																		
1065 Marsh fritillary butterfly																		
1083 Stag beetle																		
1095 Sea lamprey																		
1096 Brook lamprey																		
1099 River lamprey																		
1103 Twaite shad																		
1106 Atlantic salmon																		
1166 Great crested newt																		
1304 Greater horseshoe bat																		
1308 Barbastelle																		
1324 Greater mouse-eared bat																		
5315 Bullhead																		

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Name of European site and designation: Estuaire de la Sein	0 840	` /Mari	no Mar	nmale	1													
Name of European site and designation: Estuaire de la Sein EU Code: FR2300121	e SAC	, (IVIAI I	ne mai	IIIIIais	)													
Distance to NSIP: 90 km																		
European site features						Αd	verse l	Effect o	n Intea	rity froi	m the P	ronose	ed Dev	elopme	ent			
Effect	Au	ditory i	iniurv	Dis	sturban			Collision			irect eff			Pollution		In con	nbination	effects
Stage of Development	C	0	D	C	0	D	С	0	D	C	0	D	С	0	D	C	0	D
6199 Jersey tiger																		
1110 Sandbanks which are slightly covered by sea water all																		
the time																		
1130 Estuaries																		
1140 Mudflats and sandflats not covered by seawater at low																		
tide																		
1170 Reefs																		
1210 Annual vegetation of drift lines																		
1220 Perennial vegetation of stony banks																		
1310 Salicornia and other annuals colonizing mud and sand																		
1330 Atlantic salt meadows																		
2110 Embryonic shifting dunes																		
2120 Shifting dunes along the shoreline with Ammophila																		
arenaria ("white dunes")																		
2130 Fixed coastal dunes with herbaceous vegetation ("grey																		
dunes")																		
2160 Dunes with Hippophae rhamnoides																		
2180 Wooded dunes of the Atlantic, Continental and Boreal																		
region																		
2190 Humid dune slacks																		
3140 Hard oligo-mesotrophic waters with benthic vegetation of																		
Chara spp.																		
3150 Natural eutrophic lakes with Magnopotamion or																		
Hydrocharition-type vegetation																		
3260 Water courses of plain to montane levels with the																		
Ranunculion fluitantis and Callitricho-Batrachion vegetation																		
6210 Semi-natural dry grasslands and scrubland facies on																		
calcareous substrates (Festuco-Brometalia)																		
6430 Hydrophilous tall herb fringe communities of plains and of																		
the montane to alpine levels																		
6510 Lowland hay meadows (Alopecurus pratensis,																		
Sanguisorba officinalis)																		
9120 Atlantic acidophilous beech forests with Ilex and																		
sometimes also Taxus in the shrublayer (Quercion robori-																		
petraeae or Ilici-Fagenion)																		
9130 Asperulo-Fagetum beech forests																		
9180 Tilio-Acerion forests of slopes, screes and ravines																		

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- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Marine Outline Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.21.4, Table 10.52).
- b. Considering the very small and localised potential effect resulting from the Proposed Development, the temporary nature of effect, and the fact that any other activities which may result in in combination effects are likely to be similar or lesser in extent and magnitude, it is concluded that there is no potential for adverse effect on site integrity in combination with other relevant projects and plans (HRA Report (APP-491, Rev 006) Section 10.21.4, Table 10.52).

## HRA Integrity Matrix 24: Estuaire de la Seine SAC (Fish)

Name of European site and designation: E	stuai	re de	la Se	eine S	SAC (	Fish)																					
EU Code: FR2300121																											
Distance to NSIP: 90 km																											
European site features																e Pro	posed		opme								
Effect	In	creas		1	Physic		1	nvasiv		1	Pollutio		l	oise a			Visual			EMF		1	mpera			In	
		SSC	;		Injury	/	S	specie	es	(	event	S	ν	<i>ibrati</i>	on	Di.	sturbar	nce				С	hang	es		nbina	
		_	_					_						_				ı			1		_			effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1103 Twaite shad										×a	×a														×b		
1095 Sea lamprey										×a		×a													×b		×b
1099 River lamprey										×a	×a														×b		×b
1106 Atlantic salmon										×a	×a	×a													×b	×b	×b
1351 Harbour porpoise																											
1364 Grey seal																											
1365 Harbour seal																											
1044 Southern damselfly																											
1065 Marsh fritillary butterfly																											
1083 Stag beetle																											
1096 Brook lamprey																											
1166 Great crested newt																											
1304 Greater horseshoe bat																											
1308 Barbastelle																											
1324 Greater mouse-eared bat																											
5315 Bullhead																											
6199 Jersey tiger																											
1110 Sandbanks which are slightly covered																											
by sea water all the time																											
1130 Estuaries																											
1140 Mudflats and sandflats not covered by																											
seawater at low tide																											
1170 Reefs																											
1210 Annual vegetation of drift lines																											
1220 Perennial vegetation of stony banks																											

Name of European site and designation: Es	stuai	re de	la Se	eine S	SAC (	Fish)																					
EU Code: FR2300121																											
Distance to NSIP: 90 km																											
European site features									Ad۱	verse	Effec	t on	Integ	rity f	rom th	<u>ne Pro</u>	posed	Devel	opme			,					
Effect	In	creas SSC		1	Physic Injury		1	nvasiv specie			Pollutio event		l	oise a vibrati		Di	Visual sturbar			EMF			mpera hange			In nbinat effects	
Stage of Development	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D	С	0	D
1310 Salicornia and other annuals																											
colonizing mud and sand																											
1330 Atlantic salt meadows																											
2110 Embryonic shifting dunes																											
2120 Shifting dunes along the shoreline with																											
Ammophila arenaria ("white dunes")																											
2130 Fixed coastal dunes with herbaceous																											
vegetation ("grey dunes")																											
2160 Dunes with Hippophae rhamnoides																											
2180 Wooded dunes of the Atlantic,																											
Continental and Boreal region																											
2190 Humid dune slacks																											
3140 Hard oligo-mesotrophic waters with																											
benthic vegetation of Chara spp.																											
3150 Natural eutrophic lakes with																											
Magnopotamion or Hydrocharition-type																											
vegetation																											
3260 Water courses of plain to montane																											
levels with the Ranunculion fluitantis and																											
Callitricho-Batrachion vegetation																											
6210 Semi-natural dry grasslands and																											
scrubland facies on calcareous substrates																											
(Festuco-Brometalia)																											
6430 Hydrophilous tall herb fringe																											
communities of plains and of the montane to																											
alpine levels																											
6510 Lowland hay meadows (Alopecurus																											
pratensis, Sanguisorba officinalis)																											
9120 Atlantic acidophilous beech forests																											
with Ilex and sometimes also Taxus in the																											
shrublayer (Quercion robori-petraeae or Ilici-																											
Fagenion)																											
9130 Asperulo-Fagetum beech forests																											
9180 Tilio-Acerion forests of slopes, screes																											
and ravines																											

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- a. Adoption of routine best practice management measures will ensure that the risk of pollution events (including litter) is minimised as far as is practicable, and as such there is no potential for adverse effects on integrity. These measures will be agreed through production of a Construction Environmental Management Plan (CEMP) and associated Marine Pollution Contingency Plan (MPCP). Therefore, there is no adverse effect on site integrity (HRA Report (APP-491, Rev 006) Section 10.21, Table 10.51).
- b. Similar best practice measures are employed for the other plans and projects identified which could contribute to in combination effects. When residual effects are considered in combination with potential effects resulting from other relevant plans or projects (Table 2 of Appendix 3) it is considered that there is no potential for adverse effects on site integrity in combination with other projects and plans. HRA Report (APP-491, Rev 006) Section 10.21, Table 10.51).

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