

# **Fishguard Replacement Linkspan**

Environmental Statement

Volume IV Habitats Regulation Assessment

ES

April 2026

# Fishguard Linkspan Replacement

Environmental Statement

Volume IV HRA

**LSE Screening and Report to Inform Appropriate  
Assessment**

Fishguard  
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## LSE Screening and Report to Inform Appropriate Assessment

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# 1 Introduction

## 1.1 Overview

Fishguard Ferry Port is located in Fishguard, Pembrokeshire, South-West Wales. The Ferry Port was created in the 1910s by reclaiming land at the base of the Pen Anglas headland. The reclamation was achieved by blasting cliff rock and building out. The breakwaters were also constructed around this time. The current operation includes a twice daily ferry service to Rosslare, covering public ferry passengers and accompanied and unaccompanied freight. The berth is also infrequently used by cruise vessels and historic steamboats.

Stena Line Ports Ltd (hereafter 'the Applicant'), owner and operator of the Ferry Port, proposes to replace the existing temporary arrangement of a linkspan and jack up barge (JUB) within Fishguard Harbour, Pembrokeshire, Wales. The Proposed Development, providing a replacement pontoon and bridge, will allow safe berthing of the ferry, and provide an improved facility for passenger and vehicular access to vessels within the Port. The Site Boundary of the Proposed Development is encompassed by Fishguard Harbour, within Fishguard Bay (Figure 1-1).



Figure 1-1: Site Boundary of the Proposed Development

## 1.2 Purpose of this Report

This report has been produced to inform the Habitats Regulations Assessment (HRA) process to support the planning application and Marine Licence for the Proposed Development. It comprises the Stage 1: screening and Stage 2: appropriate assessment. This report, therefore, provides information to enable the screening of the Proposed Development with respect to its potential to have a Likely Significant Effects (LSE) on any European sites. LSE is deemed as any effect anticipated as a consequence of a project that may potentially affect the conservation objectives of the features for which the European site was designated, excluding effects which are trivial. It is important to note that this is different from a significant effect used in the context of the Environmental Impact Assessment (EIA) Directive and related EIA Regulations.

The requirement and process for the consideration of potential impacts of plans and projects on European sites have followed the European Union's (EU) Habitats Directive. In Welsh territorial waters, the Habitats Directive was initially translated into specific legal obligations by The Conservation of Habitats and Species Regulations 2017 (within 12 nautical miles (nm) of the coast), and after the United Kingdom's (UK) exit from the EU on 31 December 2020 (EU-Exit), through the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 (the 'EU Exit Regulations'). The Conservation of Offshore Marine Habitats and Species Regulations 2017 are also relevant in Welsh waters more than 12 nm from land. This report refers to the 'Habitats Regulations' as including any changes enacted by the EU Exit Regulations.

The Habitats Regulations require that an HRA must be carried out on all plans and projects that are likely to have significant effects on European sites, including Special Areas of Conservation (SACs), candidate SACs, Special Protection Areas (SPAs), proposed SACs, potential SPAs and Ramsar Sites (listed under the Ramsar Convention on Wetlands of International Importance).

As the Proposed Development is within the boundaries of the West Wales Marine SAC and in proximity to other marine SACs, an HRA of the implications of the Proposed Development on European sites is required. The screening assessment and Report to Inform the Appropriate Assessment (RIAA) presented in this report are based on the current understanding of the baseline environment and proposed activities associated with the Proposed Development, and on the Proposed Development and site-specific information currently available.

In summary, the purpose of this report is to:

- identify the relevant European sites which are designated for features which may be sensitive or vulnerable to potential impacts arising from the construction, operation and maintenance, and decommissioning of the Proposed Development;
- examine the features of the relevant European sites and determine which are not considered likely to be at risk of significant effects arising from the Proposed Development, either alone or in combination with other plans or projects, so that they can be eliminated from further consideration within the HRA process;
- examine the features of the relevant European sites and determine which are considered likely to be at risk of significant effects arising from the Proposed Development, or where the risk of significant effects cannot be ruled out, either alone or in combination with other plans or projects, so that they can be taken forward for appropriate assessment; and
- examine which of the potential impacts arising from the Proposed Development are considered likely to result in LSEs to features of European sites and which impacts can be eliminated from consideration in further stages of the HRA; and
- undertake an appropriate assessment for each qualifying feature of European sites taken forward for Stage 2: RIAA.

### **1.3 Relevant Consultations**

A summary of consultation responses from the EIA Scoping Opinion (NRW, 2025a), which could influence the HRA, or relating to European sites, is provided in below.

**Table 1-1: Summary of key consultation issues raised during consultation activities undertaken for the Proposed Development relevant to European sites and qualifying features**

| Date                                   | Consultee and type of response                     | Issues raised                                                                                                                                                                                                                                                                                                                                            | Response to issue raised and/or where considered in this chapter                                                                          |
|----------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Overarching                            |                                                    |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                           |
| 31 January 2025                        | Natural Resources Wales Advisory (NRW(A)) Comments | NRW(A) generally agree with the topics that the report has scoped into the Environmental Impact Assessment (EIA). NRW have provided specific comment below.                                                                                                                                                                                              | This response was noted, and all relevant consultation from NRW has therefore been addressed and incorporated into the HRA documentation. |
| Annex II Diadromous Fish and Shellfish |                                                    |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                           |
| 16 January 2025                        | NRW(A) Comments                                    | NRW(A) agree with the sites and potential impacts scoping assessment for fish and shellfish ecology. We welcome the inclusion of nearby designated sites (Cardigan Bay Special Area of Conservation (SAC), Afon Teifi SAC, Cleddau Rivers SAC, Pembrokeshire Marine SAC and Carmarthen Bay and Estuaries SAC) in view of the migratory species features. | These designated sites are discussed during Stage 1: Screening for Likely Significant Effects (section 5).                                |
| 31 January 2025                        | NRW PS Scoping Opinion                             | NRW PS agrees with the sites included and potential impacts scoped into the assessment for fish and shellfish ecology. NRW(A) welcomes the inclusion of nearby designated sites (Cardigan Bay SAC, Afon Teifi SAC, Cleddau Rivers SAC, Pembrokeshire Marine SAC and Carmarthen Bay and                                                                   | These designated sites are discussed during Stage 1: Screening for Likely Significant Effects (section 5).                                |

| Date            | Consultee and type of response | Issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Response to issue raised and/or where considered in this chapter                                                                                                                                                                               |
|-----------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 January 2025 | NRW(A) Comments                | <p>Estuaries SAC) in view of the migratory species features.</p> <p>NRW(A) agree with the underwater noise scoping assessment. The preliminary mitigation measures proposed for noise are standard measures and likely to be sufficient given the amount of piling proposed, however, the Applicant will need to consider the appropriateness of measures designed to reduce noise impact for mammals on fish species. However, section 10.4 in the EIA scoping report mentions that the assessment will also account for fleeing animals. It is not clear if this statement only relates to marine mammals or applies to fish as well. NRW(A) advise that assessments for fish focus on fish as a stationary receptor, as this will cover the worst case scenario and there is limited consistent information on fish utilising directional avoidant fleeing behaviour in response to noise impacts</p> | <p>This response is noted. The determination of LSE for fish in section 5.2.2.2 has been undertaken on stationary fish as a worst case scenario, based on the underwater noise modelling (see associated ES Chapter 14: Underwater Noise).</p> |
| 31 January 2025 | NRW PS Scoping Opinion         | <p>NRW PS agrees that underwater noise from piling during construction is scoped into the EIA and agrees with the preliminary mitigation measures proposed. NRW(A)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>Appropriate mitigation measures for qualifying fish features are discussed in section 6.1.</p>                                                                                                                                              |

| Date                    | Consultee and type of response | Issues raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Response to issue raised and/or where considered in this chapter   |
|-------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
|                         |                                | advises that these standard mitigation measures are likely to be sufficient; however, stresses that measures designed to reduce noise impact for mammals are not always appropriate on fish species. NRW PS would encourage you to engage with NRW(A) as you carry out your assessment and consider appropriate mitigation measures.                                                                                                                                                                                                                                                                                                                                                                                         |                                                                    |
| Annex II Marine Mammals |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                    |
| 16 January 2025         | NRW(A) Comments                | NRW(A) note that North Anglesey Marine SAC has been omitted from scoping. The activity is located within the Celtic and Irish Seas Management Unit (MU) for harbour porpoise <i>Phocoena phocoena</i> , so animals from the SAC population could feasibly be found within the survey area and could potentially therefore be impacted. Due to the mobile nature of all Annex II marine mammal features of SACs, it is accepted that they do not stay within site boundaries. We generally consider that the appropriate scale at which to consider offsite impacts for marine mammals is the relevant species specific MU. We consider SACs within an MU to be 'functionally linked' to the surrounding sea because evidence | The North Anglesey Marine SAC has been included in sections 5.1.3. |

| Date            | Consultee and type of response | Issues raised                                                                                                                                                                                                                                                                                       | Response to issue raised and/or where considered in this chapter                                                                                                                                                                                                                               |
|-----------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                | demonstrates a degree of connectivity between SACs and the wider area, and because SACs represent special areas of sea within the MU. We recommend that North Anglesey Marine SAC is scoped in for harbour porpoise.                                                                                |                                                                                                                                                                                                                                                                                                |
| 16 January 2025 | NRW(A) Comments                | For most impact pathways, particularly those associated with potential removals or injury, NRW(A) consider MUs as the most appropriate spatial scale for assessment of the Test of Likely Significant Effect (screening).                                                                           | SACs for harbour porpoise and bottlenose dolphin within the relevant Management Units (MUs) have been considered during the identification of European sites (section 5.1.3).                                                                                                                  |
| 16 January 2025 | NRW(A) Comments                | NRW(A) would like to highlight the preferred use of Oslo Paris Convention (OSPAR) Region III as a spatial area for the assessment of grey seal <i>Halichoerus grypus</i> , rather than seal MUs. However, as all three Welsh sites for grey seal have been scoped in here, no changes are required. | For completeness, SACs designated for grey seals within the OSPAR Region III have been considered during the identification of European sites (section 5.1.3).                                                                                                                                 |
| 16 January 2025 | NRW(A) Comments                | The justification for scoping out “accidental pollution to the surrounding environment” impact pathway relies on the need for mitigation measures, which suggests that this has the potential to create an adverse effect. Therefore, NRW(A) recommends the impact pathway “Accidental              | This impact remains scoped out of HRA based on the following justification. The risk of accidental pollution will be mitigated by the implementation of measures set out in standard post-consent plans, such as an Environmental Management Plan (EMP), which will include a Marine Pollution |

| Date            | Consultee and type of response | Issues raised                                                                                                                                                                                                              | Response to issue raised and/or where considered in this chapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                | pollution to the surrounding environment" should be scoped into EIA for further assessment.                                                                                                                                | Contingency Plan (MPCP). These plans will include planning for accidental spills, address all potential contaminants that could be released, and include key emergency contact details. They will also set out good industry practice and relevant guidelines for preventing pollution at sea (such as those from the Oslo Paris Convention (OSPAR), International Maritime Organisation (IMO), and the International Convention for the Prevention of Pollution from Ships (MARPOL)). Thus, it is unlikely that accidental pollution will occur and in the unlikely event that it did, it will be minimised through measures outlined in the MPCP. The approach to scope out potential LSE from accidental pollution using the justification provided here is standard practice across HRAs from a range of sectors and aligns with the proportionate approach. |
| 16 January 2025 | NRW(A) Comments                | NRW(A) welcomes the use of the data sources and literature listed within the EIA Scoping Report but would like to highlight the following relevant guidance on underwater noise to be considered when undertaking the EIA: | These guidance documents have been considered as part of the determination of LSE for Annex II marine mammals (section 5.2.3.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Date            | Consultee and type of response | Issues raised                                                                                                                                                                                                                                             | Response to issue raised and/or where considered in this chapter                                                                 |
|-----------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                 |                                | <p>NRW's Position on Assessing Behavioural Disturbance of Harbour Porpoise from underwater noise (NRW, 2023a); and</p> <p>NRW's Position on Assessing the effects of hearing injury from underwater noise for environmental assessments (NRW, 2023b).</p> |                                                                                                                                  |
| 31 January 2025 | NRW PS Scoping Opinion         | NRW PS will expect that the assessment is carried out in line with NRW's position statements (NRW, 2023a, NRW, 2023b)                                                                                                                                     | These guidance documents have been considered as part of the determination of LSE for Annex II marine mammals (section 5.2.3.2). |

## 1.4 Structure of the Report

This report is set out in the following stages:

- section 2 – Habitat Regulations Process: a summary of the HRA process and legislative context including implications of the UK's departure from the EU;
- section 3 – Project Description: a description of the key elements of the Proposed Development;
- section 4 – Assessment Methodology: the initial identification of sites and features which may potentially be affected by the Proposed Development;
- section 5 – Stage 1: Screening for Likely Significant Effects: LSE screening tables and the determination of the potential for LSEs to arise with regard to the designated features of the European sites under consideration;
- section 6 – Stage 2: Report to inform the Appropriate Assessment: an assessment for European sites that have been screened in from Stage 1; and
- section 7 – Summary: a summary of those European sites (and qualifying features) which have been identified and assessed.

## 2 Habitat Regulations Process

### 2.1 Legislative Context

The 'Habitats Directive' (Council Directive 92/43/EEC), on the conservation of natural habitats and wild fauna and flora, protects habitats and species of European nature conservation importance. Along with the Council Directive (2009/147/EC) on the conservation of wild birds (the 'Birds Directive'), the Habitats Directive establishes a network of internationally important sites, designated for their ecological status.

Following the UK departure from the EU on 31 December 2020, the Habitats Directive (and transposing Habitats Regulations) continue to apply in the UK through the EU Exit Regulations. The HRA process implemented under the Habitats Regulations stays valid (subject to minor amendments as a result of the EU Exit Regulations) and the UK is bound by HRA judgments handed down by The Court of Justice of the European Union before 31 December 2020. This document, therefore, assumes that all relevant HRA-related legislation remains in place and in accordance with Habitats Regulations that transposed the European requirements for HRA into UK law and as effected by the EU Exit Regulations (2019). The objective of the Habitats Regulations is to conserve, at a favourable conservation status, those habitats and species listed in Annexes I and II of the Habitats Directive. Post-EU-Exit, the Habitats Regulations continue to refer to Annexes I and II of the Habitats Directive and as such, reference is made to the annexes of the Habitats Directives in this report.

The Habitats Directive established the Europe-wide network of nature conservation areas that are the subject to the HRA process. These are internationally important sites, designated for their ecological status. SACs are designated under the Habitats Directive and endorse the protection of flora, fauna and habitats. European sites located within an EU Member State combine to create a Europe-wide network of European sites (the Natura 2000 network) and may be referred to as Natura 2000 Sites. In Wales, Ramsar Sites (identified under the Ramsar Convention) are also afforded the same level of protection as fully designated Natura 2000 sites.

As a consequence of the EU-Exit, European sites located within the UK are no longer part of the Natura 2000 network (nor Natura Sites). These now form the UK's 'National Site Network' and therefore, hereafter, sites within the UK and the EU are both referred to as European sites. The National Site Network constitute European sites in the UK that were established under the Nature Directives prior to 31 December 2020 (or proposed to the European Commission before that date) and any new sites designated under the Habitats Regulations under an amended designation process.

### 2.2 The Process

Following the exit from the EU, the UK no longer has any obligations under the Habitats Directives. However, the wording of Articles 6(3) and 6(4) of the Habitats Directive rules the sequential decision-making tests applied under the HRA process to plans or projects likely to affect European sites.

Regulation 63(1) of The Conservation of Habitats and Species Regulations 2017 requires that, wherever a plan or project that is not directly connected to, or necessary for, the management of a European site, is likely to have a significant effect on the conservation objectives of the site (either alone or in-combination with other plans or projects), the competent authority must undertake an 'appropriate assessment' of the implications for the site in view of the site's conservation objectives before consent or authorisation can be given for the plan or project.

Regulation 63(1) of The Conservation of Habitats and Species Regulations 2017 states that the competent authority may agree to the plan or project only after it has determined that it will not adversely affect the integrity of the European site. If an appropriate assessment concludes that the development will adversely affect the integrity of the site, Regulation 64(1) of The Conservation of Habitats and Species Regulations 2017 makes clear that consent/authorisation can only then be given if there are no alternative solutions and that the Proposed Development must be carried out

for Imperative Reasons of Overriding Public Interest (IROPI). Regulation 63(2) stipulates that where the site supports priority natural habitats or priority species, the IROPI must be in relation to reasons: i) relating to human health, public safety or beneficial consequences of primary importance to the environment, or ii) other reasons which in the opinion of the European Commission are IROPI. An agreement under these circumstances must be accompanied by the securing of necessary compensatory measures to ensure that the overall coherence of the network of European sites is protected.

Regulation 63(2) of The Conservation of Habitats and Species Regulations 2017 makes it clear that the person applying for the consent of the plan or project must provide such information as the competent authority may reasonably be required for the assessment. It is intended that this report provides this information.

To determine whether an appropriate assessment is required it must first be ascertained whether or not the plan/project is necessary to, or of value to, or inevitable as part of, management of the site for its qualifying interests. As this is not the case for the Proposed Development, it must therefore be determined whether the plan or project, either alone or in-combination with other plans and projects, is likely to have a significant effect on the European site. This constitutes the LSE screening stage, which removes from the assessment process plans or projects that have no connectivity to a site's qualifying interests or those where it is very obvious that the conservation objectives for the site's qualifying interests will not be undermined despite a connection. All other plans or projects, including those where there is reasonable doubt as to the magnitude and nature of their impact, are passed through to the next stage (appropriate assessment).

The Habitats Regulations set out a step-by-step sequence of statutory procedures to be followed that are designed to test the potential effects of plans and projects on European sites. It must be followed in the correct and particular sequence to comply with the requirements of the Habitats Directive. The guidance on conducting HRAs in Wales (Welsh Government, 2021) outlines three stages that assessments of the effects of plans or projects on European sites must follow. These stages are:

- Stage 1: screening
- Stage 2: appropriate assessment; and
- Stage 3: derogation.

## 2.3 Process for Identifying European Sites and Features

The criteria adopted for the initial identification of European sites are outlined in Table 2-1. This approach takes account of the location of the European sites in relation to the Proposed Development, the anticipated Zone of Influence (Zoi) of potential impacts associated with the Proposed Development, and the ecology and distribution of qualifying features (section 5.1).

Table 2-1 outlines the order of consideration given to the criteria used for the identification of the list of sites to be taken forward for the determination of LSE. The initial consideration is given to whether there is a physical overlap between the Proposed Development and any European sites; all sites with an overlapping boundary are screened in to be taken forward for determination of LSE. Criterion 2 next identifies any European sites, not already screened using criterion 1, where there is an overlap between the Proposed Development and the range of any qualifying mobile species of the site. Criterion 3 identifies any European sites, not already screened in by criterion 1 or 2, where the potential Zoi of the Proposed Development overlaps with a European site and/or qualifying interests of the site.

**Table 2-1: Criteria for initial identification of relevant European sites**

| Order of Consideration | Criteria Used for Initial Identification of Relevant European Sites                                                                                                                                                                                                                 |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                      | The site boundaries of the Proposed Development overlap with one or more European sites.                                                                                                                                                                                            |
| 2                      | European or Ramsar site with qualifying mobile features/species (e.g. ornithological qualifying features, Annex II marine mammals, migratory fish) whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Proposed Development. |
| 3                      | European sites and/or qualifying features located within the potential Zol of impacts associated with the Proposed Development (e.g. habitat disturbance, noise and disturbance/displacement).                                                                                      |

## 3 Project Description

### 3.1 The Proposed Development

The Proposed Development comprises the dismantling and removal of the existing linkspan infrastructure (including the existing linkspan bridge, steel linkspan towers, kiosk and associated equipment, the lattice support structure between the buffer dolphins, and the JUB). Followed by the installation of a newly manufactured floating pontoon and bridge, associated guide piles, bankseat works (remedial or new bankseat, if required), localised plough dredging, scour protection, and concrete repairs to existing structures necessary to safely accommodate the new pontoon and bridge. Civil engineering works are required to enable access and utilisation of the pontoon for the ferry traffic. Landside works will be required to adjust traffic and pedestrian routes to service the new pontoon and bridge.

The Proposed Development involves several key activities aimed at enhancing the infrastructure and operational capabilities of the harbour. Firstly, the existing linkspan bridge, steel linkspan towers, kiosk and associated equipment, lattice support structure between the buffer dolphins, and the temporary JUB will be dismantled and removed to enable the construction of the civil engineering works and installation of the new pontoon and bridge. Elements will be lifted by floating crane and/or landside plant and placed to a pontoon for tug-assisted transport or direct to land for removal, approximately 250 m<sup>3</sup> of material will be removed with all arisings sent to an appropriate licensed offsite facility. The JUB legs will be lifted from the seabed, with the barge lowered and towed away by tug.

There has been no dredging undertaken in the harbour for at least the last ten years. Localised plough dredging of loose silts and sands will be undertaken within the pontoon footprint (approximately 1,600 m<sup>2</sup>) to achieve the required bed levels (existing bed to have a maximum water depth of 5.50 m). Material (up to 1.5 m depth) will be ploughed and relocated within the berth to a deeper 'scour pocket'; the plough dredger/multipurpose vessel will track the area multiple times to achieve design levels, approximately 2,500 m<sup>3</sup> of surplus seabed material will be redistributed to a deeper scour pocket within the berth. Works will be undertaken on a 24/7 basis during a two month ferry shutdown.

Cementitious repair grout and new steel will be used to repair defective concrete to the underside of the open-piled reinforced concrete structure (soffits of slabs, beams and columns). Defective areas will be broken out to sound substrate, steel repaired/replaced as required, and shuttered pours will reinstate the concrete with cementitious repair grout.

Remedial works to the existing bankseat may include the removal of existing bolts and/or installation of chemical anchors following removal of the existing bridge, to enable connection of the new bridge. If the existing bankseat is not acceptable for the new bridge and traffic loads, a new bankseat will be constructed at the northern edge of the existing deck, formed from precast concrete or a fabricated steel frame, supported on six steel tubular piles (diameter of 0.914 m) filled with concrete. Piles will be installed using vibro-driving, impact driving, and rotary-boring techniques. Temporary works will comprise eight temporary steel piles (diameter of 0.610 m) to support a temporary structural steel frame for installation of the permanent piles.

Two tubular steel guide piles (approx. 2.032 m diameter) will be installed to restrain the pontoon. The piles will be drilled through the bed to bedrock, socketed and grouted, and filled with reinforced concrete using vibro and rotary-boring techniques. The Installation of the two guide piles will be facilitated by eight temporary steel piles (approx. 1.22 m diameter) forming a temporary piling frame/platform to support a crawler crane and drilling rig; the temporary piles will be installed by vibro and/or impact driving and removed on completion, after which the pontoon will be floated into position and secured to the guide piles.

Within the pontoon footprint, up to 1.5 m of soft seabed material will be plough-dredged, as described previously, from the areas where scour protection installation requires it. This material will be

displaced into the deeper scour pocket within the berth, which covers approximately 1,050 m<sup>2</sup> in total, including around 130 m<sup>2</sup> that overlaps with the plough-dredge area. The prepared dredged bed will then receive clean rock armour placed by a long-reach excavator on a barge, forming a scour-protection layer approximately 1 m thick, extending from the northern edge of the existing buffer dolphin beneath the new pontoon to the toe of the quay wall.

The pontoon and bridge will be newly manufactured and kept out of the water until arrival at Fishguard. They will be delivered on floating pontoon/plant towed by a tug. The pontoon will be floated into position and secured to the guide piles; the bridge will be lifted into place by floating crane/plant and secured to the existing bankseat at the edge of the suspended concrete deck structure. Final activities will include electrical connections to the pontoon, which will then be followed by testing and commissioning.

More detailed information on the scheme can be found in Chapter 2 Project Description of the Environmental Statement (ES).

### **3.2 Approach to the In-combination Assessment**

The Habitats Regulations require the consideration of the potential effects of the Proposed Development on European sites both alone and in-combination with other plans or projects.

The plans and projects relevant to the in-combination assessment were based upon the results of a screening exercise to produce a long list. For Annex I habitats and Annex II diadromous fish a screening buffer based on tidal ellipses within Fishguard Harbour and the adjacent coastline extended out to approximately 7 km from the Site Boundary, which accounts for one tidal excursion and the limited Zol for underwater noise effects on diadromous fish. While it is acknowledged that NRW would use prefer plans and projects within the relevant species-specific Management Units (MUs) for Annex II marine mammals to be considered, a screening buffer of 100 km was considered adequately precautionary based on the highly limited spatial and temporal scale of the Proposed Development and the limited Zol for underwater noise effects on marine mammals. Therefore, plans and projects within 100 km of the Proposed Development formed the long list (Figure 3-1).

There are no proposed projects currently likely to cause in-combination effects with the Proposed Development, as there was either no spatial overlap with the screening buffers defined for the qualifying features, and/or no temporal overlap with activities associated with the Proposed Development.

LSE Screening and Report to Inform Appropriate Assessment

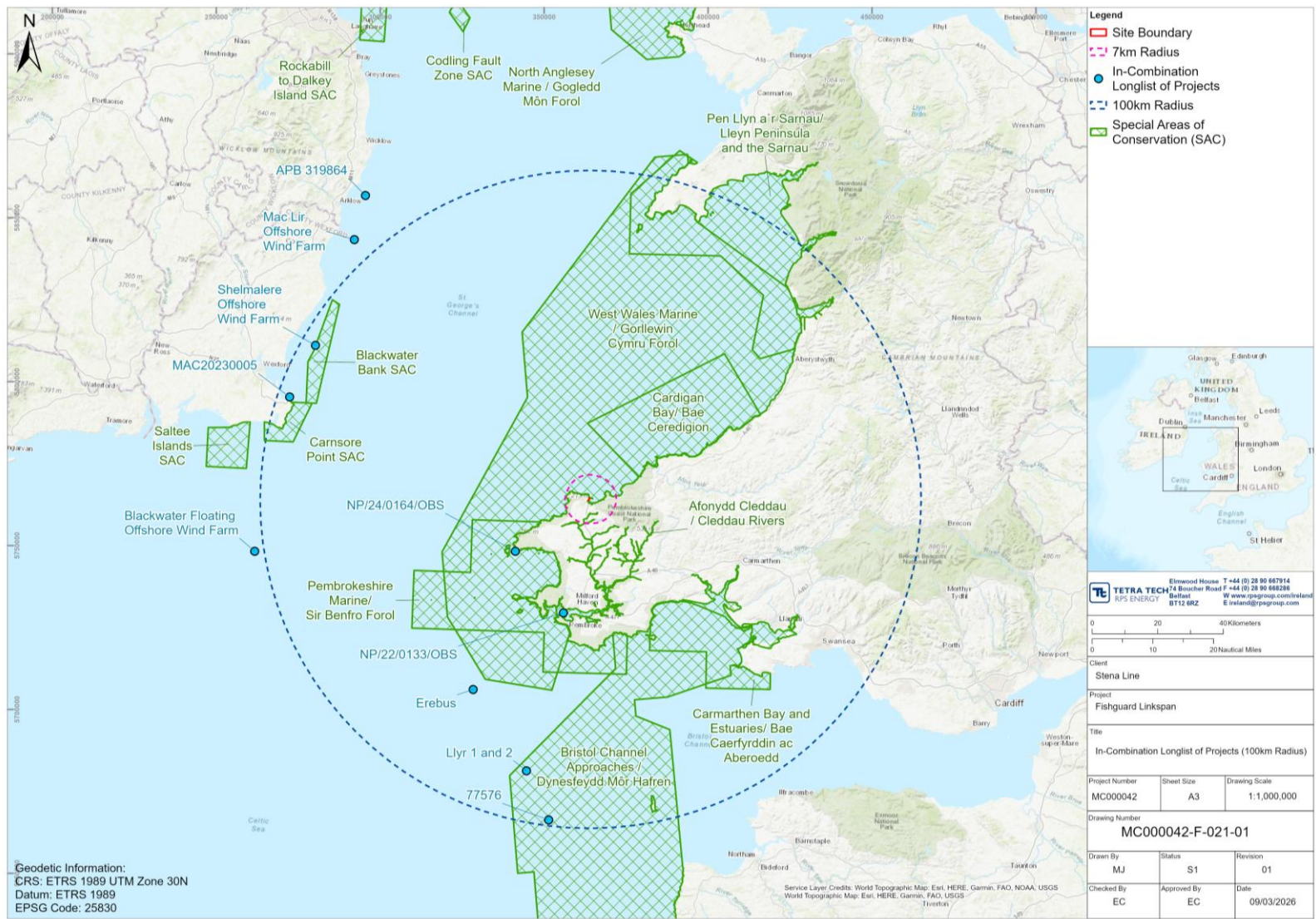


Figure 3-1: In-combination long list of plans and projects in proximity to the Site Boundary

## 4 Assessment Method

As described in section 2.2, there are three main stages to the HRA process. These are described in more detail below:

- Stage 1: Screening
  - Identify the European sites and features that have the potential for LSEs from the Proposed Development alone or in-combination with other plans and projects and provide information on identified European sites and their conservation objectives; and
  - Identify project activities that have the potential for LSE on identified European sites and their features.
- Stage 2: Appropriate Assessment
  - Where LSEs on a European site have been identified in Stage 1, consider whether those effects will adversely affect the integrity of the European site in light of its conservation objectives; and
  - For identified adverse effects on the integrity of the site provide suitable mitigation that will ensure that no adverse effect to site integrity can be concluded.

If Stage 2 concludes that the Proposed Development will have an adverse effect on the integrity of the European site(s), or is inconclusive, then Stages 3 of the HRA process (derogation) is triggered; which includes three tests to be followed in order: consider alternative solutions; consider IROPI; and secure compensatory measures. Each test must be passed in sequence for a derogation to be granted.

## 5 Stage 1: Screening for Likely Significant Effects

### 5.1 Identification of European Sites and Features

This section provides a list of European sites, and their features, for which there is the potential for connectivity with the Proposed Development, using the criteria outlined in Table 2-1, and therefore those which should be taken forward for consideration of LSE in section 5.2.

The receptors that could potentially be affected by the Proposed Development and could be the designating features of protected sites are considered in turn:

- Annex I habitats (subtidal and coastal up to mean high water springs (MHWS)) - section 5.1.1;
- Annex II diadromous fish species - section 5.1.2;
- Annex II marine mammals – section 5.1.3; and.
- Annex II otters – section 5.1.4.

There are no terrestrial SACs with designated features other than otter, considered to be within the Zol of the construction or operational phases of the Proposed Development (ES Chapter 9: Terrestrial Ecology). Therefore, only SACs designated for otters are taken forward for assessment of LSE.

There are SPAs designated for ornithological qualifying features that may have connectivity with the Proposed Development, however most of the bird species will generally avoid foraging in areas with high anthropogenic activity. As discussed in the HRA of the replacement linkspan application (RPS, 2018a), Fishguard Harbour is within the foraging range of gannets *Morus bassanus* from Grassholm SPA (43.3 km southwest). However, this species generally avoids foraging within busy coastal areas directly next to the foreshore, and is therefore unlikely to be recorded near to the proposed works. The harbour is also within the foraging range of seabirds from the Skomer, Skokholm and the Seas off Pembrokeshire SPA (31.1 km southwest). However, Manx shearwater *Puffinus puffinus*, Atlantic puffin *Fratercula arctica* and European storm petrel *Hydrobates pelagicus* also all generally avoid foraging within coastal areas directly next to foreshores that have very high levels of anthropogenic activity. These species are therefore unlikely to be recorded near to the proposed works. Lesser black-backed gull *Larus fuscus* nesting on Skomer or Skokholm would be expected to forage in closer proximity to these islands (RPS, 2018a). SPAs have therefore not been considered any further within this screening report.

#### 5.1.1 Sites Designated for Annex I Habitats

The following section details the results of the stepwise process to identify the European sites with relevant Annex I habitats to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in section 2.3 and Table 2.1.

##### 5.1.1.1 Initial Identification of Sites

- Criterion 1 for the identification of European sites to be taken forward for consideration of LSE considers those sites which overlap with the boundaries of the Proposed Development. As there are no European sites with relevant qualifying Annex I habitats, which overlap with the Proposed Development, no sites are considered further on the basis of this criterion.
- Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Proposed Development. This criterion is not relevant for Annex I benthic habitats, therefore, no sites are considered further on this basis.

- Criterion 3 considers European sites and/or qualifying features which are located within the potential Zol of impacts associated with the Proposed Development. There is the potential for indirect effects on sites designated for Annex I habitats as a result of impacts associated with increased suspended sediment concentrations (SSC) arising from dredging activities or changes to the hydrodynamic regime as a result of the presence of linkspan pontoon infrastructure associated with the Proposed Development. As such, the extent of these impacts is considered likely to extend beyond the Site Boundary of the Proposed Development. For LSE screening, a precautionary approach has been adopted and a buffer of 10 km has been used based on professional judgement. This buffer is considered to be sufficiently precautionary to capture all sites likely to be in the Zol from indirect effects associated with Proposed Development activities. The closest designated site with benthic qualifying features is the Cardigan Bay/Bae Ceredigion SAC, which sits 15.8 km from the Site Boundary. Therefore, as there are no European sites with relevant qualifying Annex I habitats, which overlap with the 10 km buffer, no sites are considered further on the basis of this criterion.

The initial screening process has not identified any sites designated for Annex I habitat features to be taken forward for the determination of LSE in this report.

### 5.1.2 Sites Designated for Annex II Diadromous Fish

The following section details the results of the stepwise process to identify the European sites with relevant Annex II diadromous fish species to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in section 2.3 and Table 2-1.

Based on the Marine Biodiversity chapter of the associated EIA Scoping Report, relevant consultation from NRW (Table 1-1) and the ES Chapter 8: Marine Biodiversity, the Annex II diadromous fish species feature with a marine component and with potential to occur in the vicinity of the Proposed Development include:

- sea lamprey *Petromyzon marinus*;
- river lamprey *Lampetra fluviatilis*;
- allis shad *Alosa alosa*;
- twaite shad *Alosa fallax*; and
- Atlantic salmon *Salmo salar*.

#### 5.1.2.1 Initial Identification of Sites

- Criterion 1 considers European sites which overlap with the boundaries of the Proposed Development. As there are no European sites with Annex II diadromous fish species as qualifying features which overlap with the Proposed Development, no sites are screened for further consideration for diadromous fish on the basis of this criterion.
- Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Proposed Development. Annex II diadromous fish species are mobile and utilise both freshwater and marine environments throughout their life cycles. Therefore, there is the potential for activities associated with the construction and operation of the Proposed Development to result in impacts on these qualifying features at a distance from the European sites. A precautionary approach to the identification of relevant sites has been adopted in order to capture all sites with the potential for connectivity with the Proposed Development. On this basis, it has been considered that sites with Annex II diadromous fish as qualifying features that are located within a 50 km buffer of the Proposed Development could potentially be affected and must, therefore, be considered. This has been based on professional judgement. Three European sites have been identified using this criterion (Figure 5-1) and screened in for determination of LSE in section 5.2 of this report. These are:

- Cardigan Bay SAC;
  - Pembrokeshire Marine SAC; and
  - River Teifi SAC.
- Criterion 3 considers European sites and/or qualifying features that are located within the potential Zol of impacts associated with the Proposed Development. Given the large buffer proposed for criterion 2 above (50 km), the Zol for key impacts to migratory fish species (i.e. underwater noise) are anticipated to be well within this range. No additional European sites with Annex II diadromous fish as qualifying features are therefore considered further on the basis of criterion 3. While it is acknowledged that the lamprey qualifying features of the Cardigan Bay and Pembrokeshire Marine SACs are part of a larger population covering the Bristol channel and wider area, and therefore may be linked to the river and sea lamprey populations of the River Wye, River Usk, River Tywi, River Teifi, Severn Estuary, Cleddau Rivers, Carmarthen Bay and Estuaries SACs, there is uncertainty around whether lampreys present have been or are yet associated with these SAC populations as lampreys do not home to their natal river (Natural Resources Wales (NRW), 2018a,b). The closest of these SACs to the Proposed Development are the Cleddau Rivers SAC, with its estuary 92.9 km south via sea and the Carmarthen Bay and Estuaries SAC 117.9 km southeast round the South Wales coast. As none of these SACs overlap with the Proposed Development and due to the already precautionary potential Zol of impacts being considered, those SACs outside this 50 km buffer were not considered.

The initial screening process has identified three European sites with Annex II diadromous fish as qualifying features to be taken forward for detailed determination of LSE in section 5.2.2 of this report. The sites are listed in Table 5-1 and shown in Figure 5-1. The standard data forms for all these European sites are provided in Appendix A.

**Table 5-1: European sites designated for Annex II diadromous fish species taken forward for determination of LSE**

| Site Name                                 | Site Code      | Relevant Qualifying feature                               | Minimum Distance from Site Boundary (km) |
|-------------------------------------------|----------------|-----------------------------------------------------------|------------------------------------------|
| Cardigan Bay/Ceredigion SAC               | BaeUK0012712   | Sea lamprey<br>River lamprey                              | 15.8                                     |
| Pembrokeshire Marine/Sir Benfro Forol SAC | UK0013116      | Sea lamprey<br>River lamprey<br>Allis shad<br>Twaite shad | 22.1                                     |
| River Teifi/Afon Teifi SAC                | TeifiUK0012670 | River lamprey<br>Atlantic salmon<br>Sea lamprey           | 23.8                                     |

Note: All distances are measured as the marine route to the site (i.e. not the distance as the crow flies)

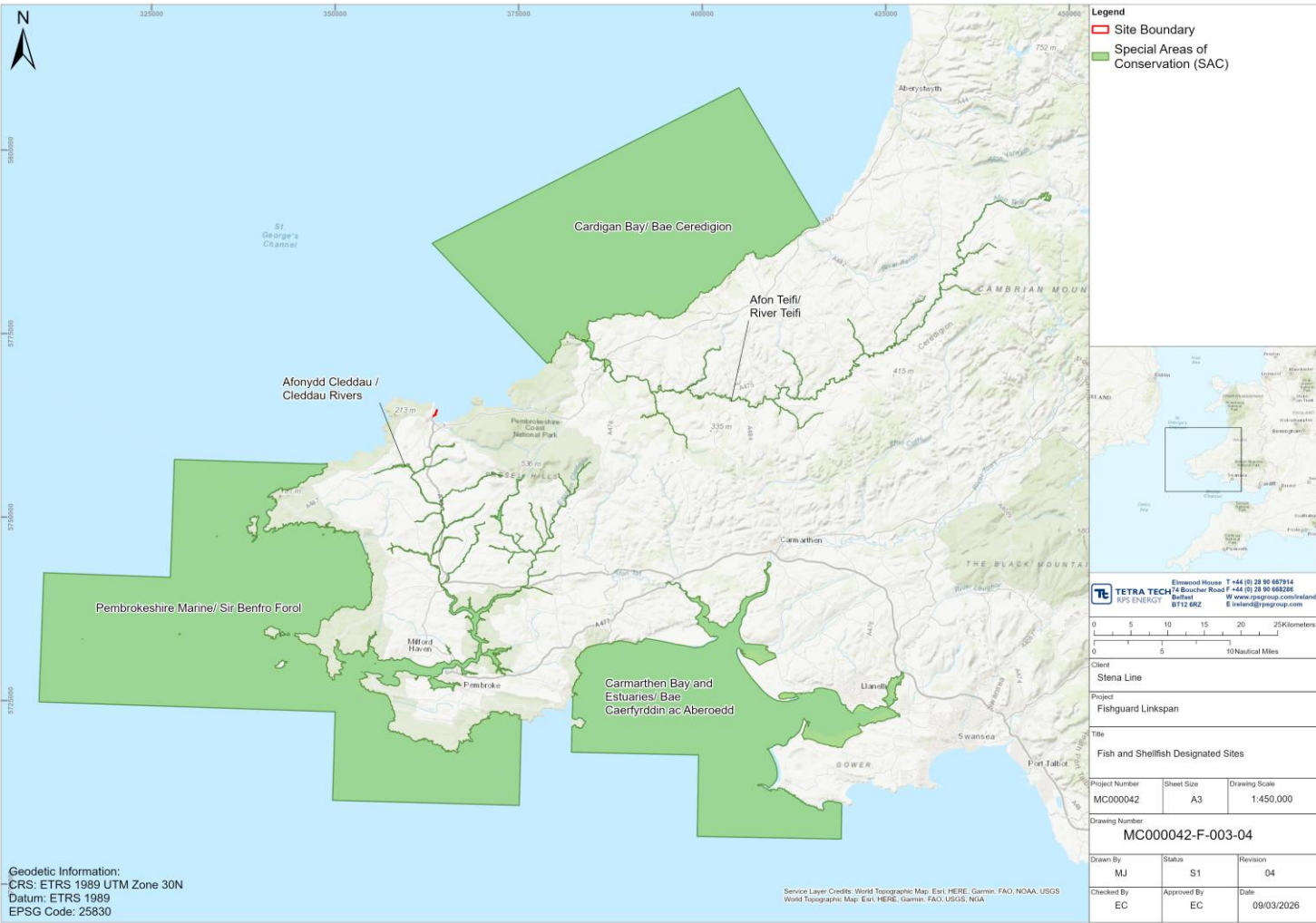


Figure 5-1: Location of European sites designated for Annex II diadromous fish and shellfish species taken forward for determination of LSE

### 5.1.3 Sites Designated for Annex II Marine Mammal

The following section details the results of the stepwise process to identify the European sites with relevant Annex II marine mammals to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in section 2.3 and Table 2-1.

Based on the Marine Biodiversity chapter of the associated EIA Scoping Report, relevant consultation from NRW (Table 1-1) and the ES Chapter 8: Marine Biodiversity, the Annex II marine mammal species likely to occur in the vicinity of the Proposed Development include:

- harbour porpoise *Phocoena phocoena*;
- bottlenose dolphin *Tursiops truncatus*; and
- grey seal *Halichoerus grypus*.

#### 5.1.3.1 Initial Identification of Sites

- Criterion 1 considers European sites which overlap with the boundaries of the Proposed Development. On the basis of this criterion, a single site, West Wales Marine SAC, is identified (Figure 5-2) and screened in for determination of LSE in section 5.2 of this report.
- Criterion 2 considers European sites with qualifying mobile species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Proposed Development. Annex II marine mammal species are highly mobile and forage over wide areas. Therefore, there is the potential for activities associated with the construction and operation of the Proposed Development to result in impacts on these qualifying features at a distance from the European sites. A precautionary approach to the identification of relevant sites, according to NRW's position (NRW, 2025b) and advice received during EIA Scoping consultation, has been adopted in order to capture all sites with the potential for connectivity with the Proposed Development. On this basis, it has been considered that sites with Annex II marine mammals as qualifying features, which are located within the same species-specific MUs as the Proposed Development could potentially be affected and must, therefore, be considered. For cetaceans, species-specific MUs are defined by the Inter-Agency Marine Mammal Working Group (IAMMWG, 2023) and include the Celtic and Irish Seas MU for harbour porpoise and the Irish Sea MU for bottlenose dolphin, while the OSPAR Region III interim MU was used for grey seals as advised by NRW (NRW, 2025b). A total of 41 European sites have been identified using this criterion (Figure 5-2) and screened in for determination of LSE in section 5.2 of this report. These are detailed in Table 5-2.
- Criterion 3 considers European sites and/or qualifying features which are located within the potential Zol of impacts associated with the Proposed Development (e.g. noise disturbance). Given the large area of search proposed above for both cetaceans and pinnipeds in criterion 2, and that the Zol for key impacts to marine mammals (i.e. underwater noise) were anticipated to be well within this area, no additional European sites with Annex II marine mammal species as qualifying features, beyond those already identified for criterion 2 are therefore considered further on the basis of this criterion.

The initial screening process has identified 41 European sites with Annex II marine mammals as qualifying features to be taken forward for detailed determination of LSE in section 5.2.3 of this report. The sites are listed in Table 5-2 and shown in Figure 5-2.

**Table 5-2: European sites designated for Annex II marine mammal species taken forward for determination of LSE**

| Site Name                                              | Site Code | Relevant Qualifying feature     | Minimum Distance from Site Boundary (km) |
|--------------------------------------------------------|-----------|---------------------------------|------------------------------------------|
| UK sites                                               |           |                                 |                                          |
| West Wales Marine/Gorllewin Cymru Forol SAC            | UK0030397 | Harbour porpoise                | Overlaps                                 |
| Cardigan Bay/Bae Ceredigion SAC                        | UK0012712 | Bottlenose dolphin<br>Grey seal | 15.8                                     |
| Pembrokeshire Marine/Sir Benfro Forol SAC              | UK0013116 | Grey seal                       | 22.1                                     |
| Llwyn Peninsula and the Sarnau/Pen Llŷn a'r Sarnau SAC | UK0013117 | Bottlenose dolphin<br>Grey seal | 67.6                                     |
| Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC   | UK0030396 | Harbour porpoise                | 83.4                                     |
| Lundy SAC                                              | UK0013114 | Grey seal                       | 119.6                                    |
| North Anglesey Marine/Gogledd Môn Forol SAC            | UK0030398 | Harbour porpoise                | 136.1                                    |
| North Channel SAC                                      | UK0030399 | Harbour porpoise                | 242.8                                    |
| Isles of Scilly Complex SAC                            | UK0013694 | Grey seal                       | 252.3                                    |
| The Maidens SAC                                        | UK0030384 | Grey seal                       | 326.1                                    |
| Treshnish Isles SAC                                    | UK0030289 | Grey seal                       | 517.9                                    |
| Monach Islands                                         | UK0012694 | Grey seal                       | 647.8                                    |
| North Rona                                             | UK0012696 | Grey seal                       | 827.3                                    |
| Irish sites                                            |           |                                 |                                          |
| Blackwater Bank SAC                                    | IE0002953 | Harbour porpoise                | 90.5                                     |
| Carnsore Point SAC                                     | IE0002269 | Harbour porpoise                | 91.7                                     |
| Saltee Islands SAC                                     | IE0000707 | Grey seal                       | 107.7                                    |
| Codling Fault Zone SAC                                 | IE0003015 | Harbour porpoise                | 148.9                                    |
| Rockabill to Dalkey Island SAC                         | IE0003000 | Harbour porpoise                | 154.7                                    |

| Site Name                                          | Site Code | Relevant Qualifying feature   | Minimum Distance from Site Boundary (km) |
|----------------------------------------------------|-----------|-------------------------------|------------------------------------------|
| Lamby Island SAC                                   | IE0000204 | Grey seal                     | 178.8                                    |
| Roaringwater Bay and Islands SAC                   | IE0000101 | Harbour porpoise<br>Grey seal | 313.1                                    |
| Kenmare River SAC                                  | IE0002158 | Harbour porpoise              | 372.8                                    |
| Blasket Islands SAC                                | IE0002172 | Harbour porpoise              | 430.1                                    |
| Horn Head and Rinclevan SAC                        | IE0000147 | Grey seal                     | 499.7                                    |
| Slieve Tooley/Tormore Island/Loughros Beg Bay SAC  | IE0000190 | Grey seal                     | 567.1                                    |
| Inishmore Island SAC                               | IE0000213 | Harbour porpoise              | 571.7                                    |
| Kilkieran Bay and Islands SAC                      | IE0002111 | Harbour porpoise              | 579.6                                    |
| Slyne Head Islands SAC                             | IE0000328 | Grey seal                     | 591.0                                    |
| West Connacht Coast SAC                            | IE0002998 | Harbour porpoise              | 591.7                                    |
| Inishbofin and Inishshark SAC                      | IE0000278 | Grey seal                     | 612.2                                    |
| Bunduff Lough and Machair/Trawalua/Mullaghmore SAC | IE0000625 | Harbour porpoise              | 612.4                                    |
| Duvillaun Islands SAC                              | IE0000495 | Grey seal                     | 666.1                                    |
| Inishkea Islands SAC                               | IE0000507 | Grey seal                     | 668.0                                    |
| French sites                                       |           |                               |                                          |
| Mers Celtiques - Talus du golfe de Gascogne SAC    | FR5302015 | Harbour porpoise              | 345.7                                    |
| Nord Bretagne DH SAC                               | FR2502022 | Harbour porpoise              | 358.1                                    |
| Abers - Côte des legends SAC                       | FR5300017 | Harbour porpoise              | 412.8                                    |
| Ouessant-Molène SAC                                | FR5300018 | Harbour porpoise<br>Grey seal | 413.9                                    |
| Côte de Granit rose-Sept-Iles SAC                  | FR5300009 | Harbour porpoise              | 421.3                                    |
| Baie de Morlaix SAC                                | FR5300015 | Harbour porpoise              | 424.9                                    |
| Tregor Goëlo SAC                                   | FR5300010 | Harbour porpoise              | 444.6                                    |

| Site Name                  | Site Code | Relevant Qualifying feature | Minimum Distance from Site Boundary (km) |
|----------------------------|-----------|-----------------------------|------------------------------------------|
| Chaussée de Sein SAC       | FR5302007 | Harbour porpoise            | 462.2                                    |
|                            |           | Grey seal                   |                                          |
| Cap d'Erquy-Cap Fréhel SAC | FR5300011 | Harbour porpoise            | 511.1                                    |

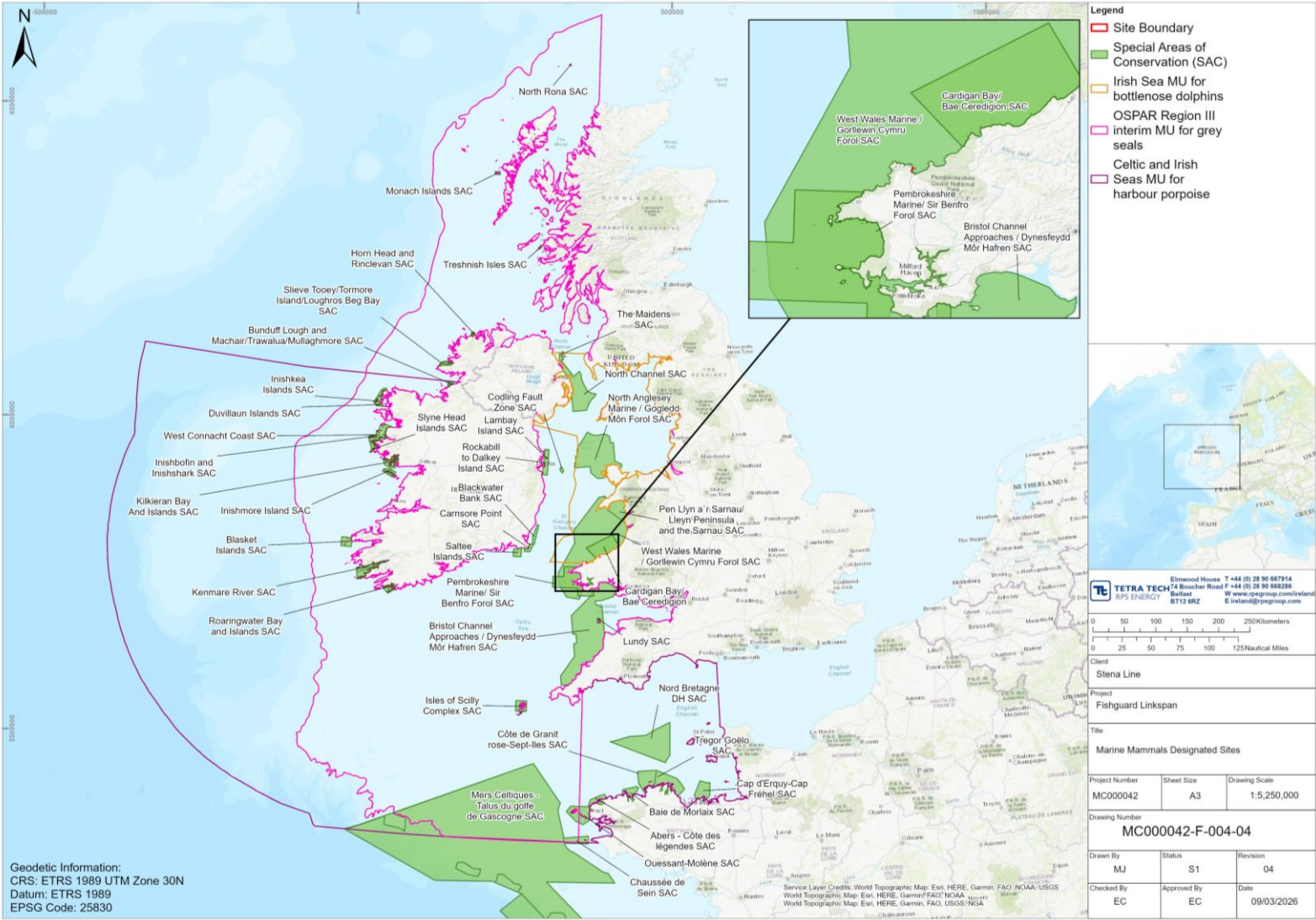


Figure 5-2: Location of European sites designated for Annex II marine mammal species taken forward for determination of LSE

### 5.1.4 Sites Designated for Annex II Otters

The following section details the results of the stepwise process to identify the European sites with relevant Annex II otters to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in section 2.3 and Table 2-1.

Based on the Terrestrial Ecology chapter of the associated EIA Scoping Report and the ES Chapter 9: Terrestrial Ecology, Annex II otter have the potential to occur in the vicinity of the Proposed Development, although on the landside of the Site Boundary habitat was assessed as having very low potential of use by otter.

#### 5.1.4.1 Initial Identification of Sites

- Criterion 1 considers European sites which overlap with the boundaries of the Proposed Development. As there are no European sites with Annex II otter as qualifying features which overlap with the Proposed Development, no sites are screened for further consideration for otter on the basis of this criterion.
- Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Proposed Development. Annex II otters are mobile and forage over certain areas away from the coast. Therefore, there is the potential for activities associated with the construction and operation of the Proposed Development to result in impacts on these qualifying features at a distance from the European sites. The size of an otter's home range depends on the quality of the habitat and food supply (Kruuk, 1995) but males can range linearly along rivers for 35 km (UK Government, 2022). A precautionary approach to the identification of relevant sites has been adopted in order to capture all sites with the potential for connectivity with the Proposed Development. On this basis, it has been considered that sites with Annex II otters as qualifying features that are located within a 10 km buffer of the Proposed Development could potentially be affected. This precautionary 10 km buffer was adopted as the otters present in Fishguard Harbour are likely to be predominantly riverine and associated with the Goodwick Brook and the River Gwaun but using the harbour to forage due to abundant prey species (ES Chapter 9: Terrestrial Ecology), so 10 km would capture the transitory nature of these otters. Otters tend to be very territorial (Scottish Government, 2018), and while otters use coastal waters for foraging, they are more likely to use good quality riverine habitat for foraging if available. One SAC, the Cleddau Rivers SAC, has been identified using this criterion (3.91 km distant), however, the connectivity between this SAC and Fishguard Harbour, and thus the Proposed Development, is considered limited. The Cleddau Rivers SAC is considered to be one of the best areas for otters in the UK (JNCC, 2017), therefore, the otters associated with this SAC are more likely to stay within the Cleddau Rivers system and not regularly use the River Gwaun. If otters associated with the Cleddau Rivers SAC use marine habitats, it is more likely to be at the estuary, which is over 92.9 km along the coast from Fishguard. Therefore, based on professional judgment, no sites are screened in for further consideration for otter on the basis of this criterion.
- Criterion 3 considers European sites and/or qualifying features which are located within the potential Zol of impacts associated with the Proposed Development (e.g. habitat loss/disturbance). Given the large buffer proposed for criterion 2 above (20 km), the Zol for key impacts to mobile otters (i.e. temporary disturbance) are anticipated to be well within this range. No additional European sites with Annex II otters as qualifying features, are therefore considered further on the basis of criterion 3.

The initial screening process has not identified any European sites with Annex II otter as a qualifying feature to be taken forward for the determination of LSE in this report.

## 5.2 Determination of Likely Significant Effects

The initial screening process documented in section 5.1 generated a list of European Sites and qualifying features (Table 5-1 and Table 5-2) for further determination of LSE as a result of the Proposed Development. This section of the LSE screening process therefore documents the determination of LSE for those European sites which have been screened in for further consideration.

### 5.2.1 Methodology

The assessment of LSE in the following sections is presented as a series of matrices setting out whether no LSE can be concluded for the relevant features of the European sites identified in section 5.1.

The approach adopted for this LSE screening report focusses on the qualifying features for which there is considered to be a potential for impact as a result of the Proposed Development. Whilst only these qualifying features have been screened in for further consideration, it is acknowledged that the competent authority must undertake the LSE screening, and any subsequent appropriate assessment, at the site level and not for individual qualifying features.

The following matrix key is applicable to the matrices presented in the subsequent sections:

✓ - Potential for an LSE/ LSE cannot be ruled out

× – No potential for an LSE

C = Construction

O = Operation and maintenance

Given that no sites were identified in the initial screening process (section 5.1) to be taken forward for determination of LSE for Annex I habitats or Annex II otter, the sections below refer only to Annex II diadromous fish (section 5.1.2) and marine mammals (section 5.1.3).

### 5.2.2 Assessment of LSE for Annex II Diadromous Fish

A description of those European sites with Annex II diadromous fish qualifying features identified in section 5.1.2 with the potential to interact with the Proposed Development is provided in the following sections. These comprise:

- Cardigan Bay SAC;
- Pembrokeshire Marine SAC; and
- River Teifi SAC.

#### 5.2.2.1 Site Overview

The following sections provide a brief overview of each of the European sites brought forward for consideration of LSE and a summary of their designated features. The standard data forms for these European sites are provided in Appendix A for all sites.

#### Cardigan Bay SAC

The Cardigan Bay SAC is a multiple interest site, located 15.8 km from the Proposed Development Site Boundary. The Bay is one of the largest bays in the UK, stretching over 100 km between the Llyn Peninsula to St. David's Head at its westernmost extent. The SAC supports a wide range of different marine habitats and wildlife, some of which are unique in Wales, across an area of approximately 959 km<sup>2</sup> (NRW, 2018a). The site is designated for river and sea lamprey as a

qualifying feature, but not a primary reason for site selection, as are grey seals. The primary reason for site selection is the bottlenose dolphin, which is discussed, with grey seals, in section 5.2.3.

The SAC is considered to be one of the best areas in the UK to support a significant presence of river and sea lampreys (NRW, 2018a). During their marine phase, lampreys are predominantly coastal, with the river lamprey considered an estuarine and inshore species, although the sea lamprey is more oceanic (NRW, 2018a). There is little information on the spatial distribution of river and sea lampreys out with rivers and estuaries, and the population status of the river lamprey is inferred from the condition monitoring of the River Teifi SAC (NRW, 2018a). However, the Cardigan Bay SAC is considered an access corridor between the open sea (feeding) and riverine (breeding) habitats, with presence thought to be highly seasonal (NRW, 2018a).

### Conservation Objectives

The conservation objectives of the SAC seek to maintain (or restore) the habitat and species features, as a whole, at (or to) favourable conservation status within the site (NRW, 2018a). The following conservation objectives relate to river and sea lamprey:

1. The species population is maintaining itself on a long-term basis as a viable component of its natural habitat. Important elements include; population size; structure, production and condition of the species.
2. The species population within the site is such that the natural range of the population is not being reduced or likely to be reduced for the foreseeable future.
3. The presence, abundance, condition and diversity of habitats and species required to support this species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. Important considerations include; distribution; extent; structure; function and quality of habitat; prey availability and quality. As part of this objective, it should be noted that;
  - a. The abundance of prey species subject to existing commercial fisheries needs to be equal to or greater than that required to achieve maximum sustainable yield and secure in the long term.
  - b. The management and control of activities or operations likely to adversely affect the species feature is appropriate for maintaining it in favourable condition and is secure in the long term.
  - c. Contamination of potential prey species should be below concentrations potentially harmful to their physiological health.
  - d. Disturbance by human activity is below levels that suppress reproductive success, physiological health or long-term behaviour.

### Pembrokeshire Marine SAC

Pembrokeshire Marine SAC is a multiple interest site, located 22.1 km from the Proposed Development Site Boundary. The site has high habitat and biological diversity, covering an area of approximately 1,380 km<sup>2</sup>, and supports a significant presence of allis and twaite shad, and river and sea lamprey (NRW, 2018b). These diadromous fish species are a qualifying feature, but not a primary reason for site selection. The primary reason for site selection is the grey seal, which is discussed in section 5.2.3.

Shad spend most of their adult lives at sea but spawn in rivers (or, occasionally, in the upper reaches of estuaries) in early summer. The most important breeding populations occur in the Rivers Tywi, Usk, Wye and Severn (NRW, 2018b). Juvenile shad predominantly inhabit estuarine and inshore waters, while adults are typically found in shoals in deeper water and are capable of migrating in excess of 1,000 km. The SAC is used as an access corridor between open sea (feeding) and riverine (breeding) habitats. Their distributions, proportions of the population, as well as the age and sex of

the shad, within the site are considered to be dynamic and highly seasonal but are unknown (NRW, 2018b).

As described for Cardigan Bay SAC, it is assumed the SAC is used as an access corridor, but little is known about the population status of river and sea lamprey within the Pembrokeshire Marine SAC. The river lamprey population status for this SAC is inferred from the condition monitoring of the Cleddau Rivers SAC; it is assumed that juveniles are present across the site throughout the year as river lampreys feed and grow in estuaries and inshore waters (NRW, 2018b). Peak migration of adult sea lampreys through the site to spawning rivers usually coincides with temperatures that remain above 10°C and continues until temperatures reach 18°C (March-June). Juvenile sea lampreys, like river lampreys, feed in estuaries and inshore waters, migrating downstream from rivers between December and June. Therefore, it can be assumed that various stages of sea lamprey will be present in the SAC year round (NRW, 2018b).

### Conservation Objectives

The conservation objectives of the SAC seek to achieve favourable conservation status of qualifying diadromous fish, by maintaining (or restoring) all the following, subject to natural processes (NRW, 2018b):

1. The species population is maintaining itself on a long-term basis as a viable component of its natural habitat. Important elements include; population size; structure, production and condition of the species.
2. The species population within the site is such that the natural range of the population is not being reduced or likely to be reduced for the foreseeable future.
3. The presence, abundance, condition and diversity of habitats and species required to support this species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. Important considerations include; distribution; extent; structure; function and quality of habitat; prey availability and quality. As part of this objective, it should be noted that;
  - a. The abundance of prey species subject to existing commercial fisheries needs to be equal to or greater than that required to achieve maximum sustainable yield and secure in the long term.
  - b. The management and control of activities or operations likely to adversely affect the species feature is appropriate for maintaining it in favourable condition and is secure in the long term.
  - c. Contamination of potential prey species should be below concentrations potentially harmful to their physiological health.
  - d. Disturbance by human activity is below levels that suppress reproductive success, physiological health or long-term behaviour.

### River Teifi SAC

The River Teifi SAC is a multiple interest site, located 23.8 km from the Proposed Development Site Boundary. The site includes ten of the river's tributaries, and at 122 km is one of the longest rivers in Wales. Its source is Llyn Teifi in the Cambrian Mountains, with its estuary in Cardigan, leading to the Cardigan Bay SAC. Overall, the SAC covers an area of approximately 7 km<sup>2</sup>. It includes river lamprey and Atlantic salmon as a primary reason for site selection, and sea lamprey as a qualifying feature, but not a primary reason (Garrett, 2016; NRW, 2022).

Adult lampreys and salmon migrate upstream to suitable spawning grounds, and juveniles of all species migrate downstream to estuarine and marine habitats for feeding and growth. Atlantic salmon is present throughout the river apart from around the source, while distributions of the

lamprey are poorly understood. It is thought that sea lamprey remains in the lower river, while river lamprey has a patchy distribution across the river catchment (NRW, 2022).

### Conservations objectives

The conservation objectives of the SAC seek to achieve favourable conservation status of qualifying diadromous fish, by satisfying the following conditions (NRW, 2022):

1. The population of the feature in the SAC is stable or increasing over the long term.
2. The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches where predominantly suitable habitat for each life stage exists over the long term. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms e.g. suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions e.g. food supply. Suitable habitat need not be present throughout the SAC but where present must be secured for the foreseeable future. Natural factors such as waterfalls may limit the natural range of individual species. Existing artificial influences on natural range that cause an adverse effect on site integrity, such as physical barriers to migration, will be assessed.
3. There is, and will continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis.

#### 5.2.2.2 Determination of LSE

This section provides an assessment undertaken to conclude whether it can be determined that there will be no LSE as a result of the Proposed Development on relevant diadromous fish qualifying features of the following SACs:

- Cardigan Bay SAC;
- Pembrokeshire Marine SAC; and
- River Teifi SAC

### Temporary loss and/or disturbance of seabed habitats

Temporary habitat loss and/or disturbance may occur during dredging activities in the construction phase. The footprint of this impact (2,520 m<sup>2</sup>, 4.6%<sup>1</sup> of the Site Boundary (54,325 m<sup>2</sup>)), however, would only constitute a very small fraction of the known ranges of local fish populations. Given that the works will be undertaken within an existing ferry terminal in Fishguard Harbour, the area does not represent pristine habitat, and any fish populations within the harbour are likely to be habituated to this. The Fishguard Harbour is not considered to represent an important habitat for fish species, in the context of the wider Pembrokeshire coast and there is no spatial overlap between the Proposed Development and any European Sites designated for Annex II diadromous fish species. On this basis, there is no potential for direct impacts to supporting habitats for Annex II diadromous fish species within any European site. Therefore, there is no potential for LSE to Annex II diadromous fish features as a result of the Proposed Development footprint during the construction or operation phase, and this impact is screened out from further assessment for all SACs.

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<sup>1</sup> Noting this is a precautionary estimate as much of the Site Boundary is onshore and the overlap with the offshore area is minimal.

### **Long term loss and/or disturbance of seabed habitats**

Long term habitat loss and/or disturbance may occur in the construction phase, and will persist into the operational phase, due to the construction of the new reclamation area. The footprint of infrastructure associated with the Proposed Development will, however, cover a localised area (up to 2.9%<sup>1</sup> (1,600 m<sup>2</sup>) of the Site Boundary) that would only constitute a very small fraction of the known ranges of local fish populations. Given that the works will be undertaken within an existing ferry terminal within a harbour, the area does not represent pristine habitat, and any fish populations within the harbour are likely to be habituated to this. The Fishguard Harbour is not considered to represent an important habitat (feeding, nursery or spawning) for fish species, in the context of the wider Pembrokeshire coast, and there is no spatial overlap between the Proposed Development and any European Sites designated for Annex II diadromous fish species. On this basis, there is no potential for direct impacts to supporting habitats for Annex II diadromous fish species within any European site. Therefore, there is no potential for LSE to Annex II diadromous fish features at any of the identified SACs as a result of the Proposed Development footprint during the construction or operation phase and this impact is screened out from further assessment for all SACs.

### **Increased Suspended Sediment Concentrations (SSCs) and associated deposition**

There will be dredging undertaken in the construction phase, which could result in increased SSCs and deposition. Fish species may be vulnerable to this impact, through decreased visibility due to increased turbidity, and smothering from increased SSCs and associated deposition and siltation rate changes, which may impede foraging ability. There is no spatial overlap between the Proposed Development and any European Sites designated for Annex II diadromous fish species. While there is potential for juvenile or migrating adult diadromous fish to be within the Zol for increased SSCs and associated deposition, given the wide alternate sea area available, it is unlikely this will cause significant effects on the species or create a barrier to migration. Plough dredging will remove up to 2,500 m<sup>3</sup> of surplus seabed sediment within the Site Boundary. However, physical processes modelling suggests that elevated SSCs, sediment plumes, and associated deposition will be localised within the vicinity of the dredge footprint, and be diminished quickly to below background concentrations of 5 mg/L (see ES Chapter 10: Coastal Processes for full details). As such, the variation in SSC is not considered to be significant when compared with the natural range likely to be encountered within Fishguard Harbour. No significant effects on the conservation objectives of relevant European sites from increased SSCs and associated deposition are anticipated. Therefore, there is no potential for LSE to Annex II diadromous fish features at any of the identified SACs during dredging activities, and this impact has been screened out from further assessment for all SACs.

### **Changes in water quality (including release of sediment bound contaminants)**

Dredging associated with construction activities will be undertaken within the Site Boundary. This could result in changes in water quality, such as organic enrichment and oxygen depletion and the release of sediment bound contaminants. Previous chemical sediment analysis undertaken for the installation of the replacement linkspan suggested an overall low level of contamination in Fishguard Harbour (RPS, 2018b), so exposure to potential contaminants is assessed as low. There is no spatial overlap between the Proposed Development and any European Sites designated for Annex II diadromous fish species, and so, while there is potential for juvenile or migrating adult diadromous fish to be within the Zol for this impact, it is unlikely this will cause significant effects on the species or create a barrier to migration. No significant effects on the conservation objectives of relevant European sites from changes in water quality are anticipated. Therefore, there is no potential for LSE to Annex II diadromous fish features at any of the identified SACs due to changes in water quality during dredging activities, and this impact has been screened out from further assessment for all SACs.

## **Accidental pollution to the surrounding environment**

There is a risk of accidental pollution from vessels and equipment, during the construction and operation phases. Pollution events are considered unlikely, and given the volumes, should an event occur, effects will be temporary, reversible and limited in spatial extent (e.g. due to the expected low volumes of pollutants associated with vessels and equipment). In addition, it is anticipated that the risk of accidental pollution events will be further reduced and managed by the implementation of measures set out in standard post-consent plans,) such as an Environmental Management Plan (EMP), which will include a Marine Pollution Contingency Plan (MPCP). These plans are considered to be tertiary mitigation (standard sectoral practice as per Institute of Environmental Management and Assessment (IEMA) guidance on mitigation (IEMA, 2024)) and will include planning for accidental spills, address all potential contaminants that could be released, and include key emergency contact details. They will also set out good industry practice and relevant guidelines for preventing pollution at sea (such as those from OSPAR, IMO, and MARPOL).

In the unlikely event of an accidental pollution event occurring, based on the above, any indirect effects on Annex II diadromous fish species from the accidental release of pollutants are not anticipated to lead to a significant effect on the conservation objectives of relevant European sites. Therefore, there is no potential for LSE to Annex II diadromous fish features at any of the identified SACs as a result of accidental pollution during the Proposed Development and this impact is screened out from further assessment for all SACs.

## **Increased risk of introduction and spread of Invasive Non-Native Species (INNS)**

There is potential for the increased risk of introduction and spread of INNS associated with the Proposed Development. This is due to vessel movement, which may act as vectors facilitating the spread of INNS: up to six vessels may be present during the construction phase, which will not be on site for an extended period of time. In addition, the installation of artificial hard structures (such as the linkspan pontoon and rock armour revetment) may represent increased available habitat for INNS to colonise throughout the operation phase. Given the wider ranging nature and habitat use of Annex II diadromous fish species, this impact is not likely to represent a significant impact to their ecology. It is anticipated that the risk of introduction and spread of INNS will be minimised and managed by the implementation of an INNS Management Plan, which is considered tertiary mitigation (standard sectoral practice) as per the updated IEMA guidance on mitigation (IEMA, 2024). No significant effects on the conservation objectives of relevant European sites are anticipated. Therefore, there is no potential for LSE to Annex II diadromous fish features at any of the identified SACs as a result of the increased risk of introduction and spread of INNS associated with the Proposed Development and this impact is screened out from further assessment for all SACs.

## **Underwater noise from construction noise**

There is potential for diadromous fish to be present within or transiting through the Proposed Development Site Boundary and potential ZOI during the “noisy” construction activities. Various piling activities, alongside other noise sources, such as dredging and dismantle/removal activities, will occur as part of the construction phase of the Proposed Development, with most proposed piling activities considered to be non-impulsive noise sources, such as the vibro piling and rotary boring techniques to install the pontoon’s main piles. Impact piling (i.e. an impulsive noise source) will only take place in connection with the installation of eight support piles. The impulsive impact piling has the largest source levels: 209 dB Exposure Level (SEL) or 245 dB maximal instantaneous Sound Pressure Level (SPL) ( $L_P$ ). Therefore, the impact piling of the support piles has the greatest potential to cause auditory injury or Temporary Threshold Shift (TTS) and/or behavioural disturbance to diadromous fish species, according to the underwater noise modelling in the ES Chapter 14: Underwater Noise, and as such, is presented here as the worst-case scenario for underwater noise from construction noise for diadromous fish. Further details on the background of underwater noise and its impact on diadromous fish can be found in ES Chapter 8: Marine Biodiversity.

In ES Chapter 14: Underwater Noise, the injury and disturbance criteria (Popper *et al.*, 2024; Washington State Department of Transport, 2020; Worcester, 2006) used for impulsive noise for fish was:

- for auditory injury 203 dB SEL and 207 dB LP;
- for TTS 186 dB SEL and 193 dB LP; and
- for behavioural disturbance 150 dB SPL and 160 dB LP.

The auditory injury thresholds for stationary<sup>2</sup> diadromous fish were exceeded out to 670 m from the source of impact piling, while the auditory injury peak pressure exceeded the threshold 10 m from the source. The TTS threshold was exceeded at peak pressure out to 70 m from source of impact piling, while the behavioural disturbance range was 4,900 m. Behavioural disturbance is limited to line of sight by the enclosure of Fishguard Bay, with the northern breakwater of the Harbour and the headland to the east (Ynys Dinas/Dinas Island). While impact piling presents the worst-case scenario from underwater noise during construction, construction noise with a maximum disturbance range of 4.9 km, will last, in some form, for up to 12 weeks. However, this will be in the context of a relatively noisy background environment dominated by the ferry service from/to Rosslare, Ireland within Fishguard Harbour (see ES Chapter 14: Underwater Noise for further details).

Therefore, the potential for LSE on the relevant Annex II diadromous fish features of the identified European sites as a result of underwater noise arising from construction activities cannot be discounted. Due to this potential pathway, there is potential for LSE on Annex II diadromous fish features as a result of underwater noise from piling, and therefore this impact has been screened in for further assessment for all SACs.

### **Underwater noise from vessels**

The construction activities will require approximately six vessels (including plough dredger and/or multipurpose vessel, and a JUB), although there is only likely to be two vessels onsite at any one time due to phased construction. This represents a small change from the baseline vessel traffic conditions in the already busy harbour where fish are likely to be habituated to vessel noise should they enter the harbour. The construction phase will last approximately five months, so additional vessels will be present over a relatively short term, and will include a two month shut down of the ferry terminal, which will temporarily reduce the number of vessels present within Fishguard Harbour. Therefore, there is no potential for LSE to Annex II diadromous fish features at any of the identified SACs as a result of underwater noise from vessels during the Proposed Development and this impact is screened out from further assessment for all SACs.

### **In-combination effects**

There are no other projects or plans currently considered in development within the 7 km screening buffer for Annex II diadromous fish features (Figure 3-1). Therefore, there are no other projects or plans that have the potential to result in LSE to Annex II diadromous fish features as a result of in-combination effects during the construction and operation phases of the Proposed Development. Therefore, in-combination effects have been screened out from further assessment.

### **Summary**

Table 5-3 provides a summary of the assessment, indicating whether the likely significant effects on the identified SAC features were screened in or out.

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<sup>2</sup> Underwater noise modelling assumes fish receivers are stationary as a precautionary approach.

**Table 5-3: Likely significant effects matrix for Annex II diadromous fish features of SACs (C: Construction; O: Operation)**

| Impact                                                                      | Phase | Cardigan Bay/Bae Ceredigion SAC |               | Pembrokeshire Marine/Sir Benfro Forol SAC |               |            |             | River Teifi/Afon Teifi SAC |                 |             |
|-----------------------------------------------------------------------------|-------|---------------------------------|---------------|-------------------------------------------|---------------|------------|-------------|----------------------------|-----------------|-------------|
| Qualifying feature                                                          |       | Sea lamprey                     | River lamprey | Sea lamprey                               | River lamprey | Allis shad | Twaite shad | River lamprey              | Atlantic Salmon | Sea lamprey |
| Temporary loss and/or disturbance of seabed habitats                        | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                                                                             | O     | N/A                             | N/A           | N/A                                       | N/A           | N/A        | N/A         | N/A                        | N/A             | N/A         |
| Long term loss and/or disturbance of seabed habitats                        | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                                                                             | O     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
| Increased SSCs and associated deposition                                    | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                                                                             | O     | N/A                             | N/A           | N/A                                       | N/A           | N/A        | N/A         | N/A                        | N/A             | N/A         |
| Changes in water quality (including release of sediment bound contaminants) | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                                                                             | O     | N/A                             | N/A           | N/A                                       | N/A           | N/A        | N/A         | N/A                        | N/A             | N/A         |
| Accidental pollution to the surrounding environment                         | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                                                                             | O     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
| Increased risk of introduction and spread of INNS                           | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                                                                             | O     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
| Underwater noise from                                                       | C     | ✓                               | ✓             | ✓                                         | ✓             | ✓          | ✓           | ✓                          | ✓               | ✓           |
|                                                                             | O     | N/A                             | N/A           | N/A                                       | N/A           | N/A        | N/A         | N/A                        | N/A             | N/A         |

| Impact                        | Phase | Cardigan Bay/Bae Ceredigion SAC |               | Pembrokeshire Marine/Sir Benfro Forol SAC |               |            |             | River Teifi/Afon Teifi SAC |                 |             |
|-------------------------------|-------|---------------------------------|---------------|-------------------------------------------|---------------|------------|-------------|----------------------------|-----------------|-------------|
| Qualifying feature            |       | Sea lamprey                     | River lamprey | Sea lamprey                               | River lamprey | Allis shad | Twaite shad | River lamprey              | Atlantic Salmon | Sea lamprey |
| construction activities       |       |                                 |               |                                           |               |            |             |                            |                 |             |
| Underwater noise from vessels | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                               | O     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
| In-combination effects        | C     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
|                               | O     | x                               | x             | x                                         | x             | x          | x           | x                          | x               | x           |
| x - Screened Out              |       |                                 |               |                                           |               |            |             |                            |                 |             |
| ✓ - Screened In               |       |                                 |               |                                           |               |            |             |                            |                 |             |

### 5.2.3 Assessment of LSE for Annex II Marine Mammals

A description of those European sites with Annex II marine mammal qualifying features identified in section 5.1.3 with the potential to interact with the Proposed Development is provided in the following sections.

While there are Northern Irish, Scottish, Irish and French European sites within the species-specific MUs for harbour porpoise and grey seal (Table 5-2), the Proposed Development is a small scale project with effects over a restricted geographical area (constrained Zols of impacts). As such, a sequential approach to screening in SACs closest to the source of impact has been undertaken for determination of LSE according to NRW's HRA position statement (NRW,2025). Therefore, site overviews are only provided for the Welsh European sites and the nearby transboundary European site for harbour porpoise in section 5.2.3.1. These comprise:

- West Wales Marine SAC;
- Cardigan Bay SAC;
- Pembrokeshire Marine SAC;
- Lleyn Peninsula and the Sarnau SAC;
- Bristol Channel Approaches SAC; and
- North Anglesey SAC.

#### 5.2.3.1 Site Overview

The following sections provide a brief overview of six relevant UK European sites brought forward for consideration of LSE and a summary of their designated features. The standard data forms for these European sites are provided in Appendix A.

##### West Wales Marine SAC

The West Wales Marine SAC is a large (7,376 km<sup>2</sup>) site, located off the coast of Wales, stretching from the Lleyn peninsula in the north, to Pembrokeshire in the south-west. This SAC overlaps with the Proposed Development boundary, as well as other SACs including parts of the Pembrokeshire Marine and Lleyn Peninsula and the Sarnau SACs, and encompasses Cardigan Bay SAC. The harbour porpoise is the sole reason for site selection, with the SAC designated for its protection, as it is estimated the site supports 5.4% of the UK Celtic and Irish Seas Management Unit (MU) harbour porpoise population (NRW, 2023a). The SAC supports long-term and relatively high densities of harbour porpoise, although use of the site varies between seasons (NRW and Joint Nature Conservation Committee (JNCC), 2019). The site has been identified as important summer habitat for harbour porpoise, with a smaller area around Cardigan Bay identified as winter habitat (NRW, 2023a). This implies within the SAC there is good foraging habitat with good feeding opportunities (NRW and JNCC, 2019).

##### Conservation objectives

The conservation objectives for the SAC are to ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining favourable conservation status for harbour porpoise in UK waters (NRW and JNCC, 2019). In the context of natural change, this will be achieved by ensuring that:

1. Harbour porpoise are a viable component of the site.
2. There is no significant disturbance of the species.
3. The condition of supporting habitats and processes, and the availability of prey is maintained.

## Cardigan Bay SAC

As discussed in section 5.2.2, the Cardigan Bay SAC is a multi-feature site 15.8 km from the Proposed Development Site Boundary. The SAC is considered one of the best areas in the UK for bottlenose dolphin, which is the primary reason for site selection, and to support a significant presence of grey seal, a qualifying feature, but not a primary reason for site selection (NRW, 2018a).

Bottlenose dolphins are seen year round in Cardigan Bay, with the population estimated are around 125 individuals. These individuals are considered part of the Irish Sea MU (IAMMWG, 2023), and although individuals may have preference for particular coastal areas, they range widely in the winter (NRW, 2018c). The inshore waters are used for both feeding and reproduction, and in the summer months calves and juveniles are often observed with adult individuals or groups, with group size peaking in September and October (NRW, 2018a). While dolphins are reported less frequently in winter months, this could be an artefact of poorer weather conditions and fewer observers, but may also be due to a preference for the offshore areas of the bay during winter (NRW, 2018a).

Grey seals range through Cardigan Bay and the seals present within the SAC are not a discrete population limited to the SAC. The SAC itself is located in the Wales seal MU, however, as seals travel beyond the site, they may be part of the South-west (SW) England or Wales seal MUs (NRW, 2018a), as well as the OSPAR Region III interim MU (NRW, 2025b). Grey seals are distributed widely within the SAC with moulting and resting haul-out sites scattered along the site, although none are used by large numbers (NRW, 2018a). Pupping takes places throughout the site on open coast in suitable habitat and is greatest towards the south-western end of the SAC. This pup production is a small proportion of the south-west Wales production and the use of sea-caves by seals within the SAC is considered an unusual variation in breeding behaviour (NRW, 2018a).

## Conservation Objectives

The conservation objectives of the SAC seek to maintain (or restore) the habitat and species features, as a whole, at (or to) favourable conservation status within the site (NRW, 2018a). The following conservation objectives relate to bottlenose dolphin and grey seal:

1. The species population is maintaining itself on a long-term basis as a viable component of its natural habitat. Important elements include; population size; structure, production and condition of the species. As part of this objective, it should be noted that;
  - a. Contaminant burdens derived from human activity are below levels that may cause physiological damage, or immune or reproductive suppression for bottlenose dolphins and grey seals.
  - b. For grey seal, populations should not be reduced as a consequence of human activity.
2. The species population within the site is such that the natural range of the population is not being reduced or likely to be reduced for the foreseeable future. As part of this objective, it should be noted that for bottlenose dolphin and grey seal:
  - a. Their range within the SAC and adjacent inter-connected areas is not constrained or hindered.
  - b. There are appropriate and sufficient food resources within the SAC and beyond.
  - c. The sites and amount of supporting habitat used by these species are accessible and their extent and quality is stable or increasing.
3. The presence, abundance, condition and diversity of habitats and species required to support this species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. Important considerations include; distribution; extent; structure; function and quality of habitat; prey availability and quality. It should be noted that for the bottlenose dolphin populations should be increasing. As part of this objective, it should also be noted that;

- a. The abundance of prey species subject to existing commercial fisheries needs to be equal to or greater than that required to achieve maximum sustainable yield and secure in the long term.
- b. The management and control of activities or operations likely to adversely affect the species feature is appropriate for maintaining it in favourable condition and is secure in the long term.
- c. Contamination of potential prey species should be below concentrations potentially harmful to their physiological health.
- d. Disturbance by human activity is below levels that suppress reproductive success, physiological health or long-term behaviour.

## **Pembrokeshire Marine SAC**

As discussed in section 5.2.2, the Pembrokeshire Marine SAC is a multi-feature site 22.1 km from the Proposed Development Site Boundary. The primary reason for site selection is the grey seal, as the Pembrokeshire coast hosts the main colony in Wales (NRW, 2018b).

The grey seals present within the SAC are not a discrete population limited to the SAC, and as per Cardigan Bay SAC, are part of the Wales seal MU, although they may be part of either the SW England or Wales seal MUs (NRW, 2018b), as well as the OSPAR Region III interim MU (NRW, 2025b), as they have large ranges and are widely distributed. The south-west Wales population is estimated at approximately 5000 individuals, with pup count data collected from small parts of the Pembrokeshire Marine SAC (Skomer Island and Marloes Peninsula) consisting of most of the long-term survey data from which the population data is inferred (NRW, 2018b). Popping takes place throughout the site on open coast in suitable habitat, with secluded coves and caves preferred by the south-west Wales population (as within Cardigan Bay SAC) (NRW, 2018b). Grey seals are distributed widely within the SAC with moulting and resting haul-out sites scattered along the site, although none are used by large numbers. Offshore islands and remote, undisturbed and inaccessible rocky shores and beaches are the known winter moulting haul-outs and non-moulting/resting haul-outs (NRW, 2018b).

## **Conservation Objectives**

The conservation objectives of the SAC seek to achieve favourable conservation status of grey seal by maintaining (or restoring) all the following, subject to natural processes (NRW, 2018b):

1. The species population is maintaining itself on a long-term basis as a viable component of its natural habitat. Important elements include; population size; structure, production and condition of the species. As part of this objective, it should be noted that for grey seal;
  - a. Contaminant burdens derived from human activity are below levels that may cause physiological damage, or immune or reproductive suppression.
  - b. Populations should not be reduced as a consequence of human activity.
2. The species population within the site is such that the natural range of the population is not being reduced or likely to be reduced for the foreseeable future. As part of this objective, it should be noted that for grey seal:
  - a. Their range within the SAC and adjacent inter-connected areas is not constrained or hindered.
  - b. There are appropriate and sufficient food resources within the SAC and beyond.
  - c. The sites and amount of supporting habitat used by these species are accessible and their extent and quality is stable or increasing.

3. The presence, abundance, condition and diversity of habitats and species required to support this species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. Important considerations include; distribution; extent; structure; function and quality of habitat; prey availability and quality. As part of this objective, it should be noted that;
- a. The abundance of prey species subject to existing commercial fisheries needs to be equal to or greater than that required to achieve maximum sustainable yield and secure in the long term.
  - b. The management and control of activities or operations likely to adversely affect the species feature is appropriate for maintaining it in favourable condition and is secure in the long term.
  - c. Contamination of potential prey species should be below concentrations potentially harmful to their physiological health.
  - d. Disturbance by human activity is below levels that suppress reproductive success, physiological health or long-term behaviour.

### **Lleyn Peninsula and the Sarnau SAC**

The Lleyn Peninsula and the Sarnau SAC is a multiple interest site of approximately 1,460 km<sup>2</sup>, located in north-west Wales, 67.6 km from the Proposed Development Site Boundary. The site encompasses a wide diversity of marine habitats, for which various Annex I habitats it is primarily designated. The grey seal and bottlenose dolphin are qualifying features, but not primary reason for site selection, although the site supports a significant presence of both species (NRW, 2018c).

As with Cardigan Bay and Pembrokeshire Marine SACs, there is not a discrete population of grey seals within the Lleyn Peninsula and the Sarnau SAC; rather they are considered part of the SW England and Wales MUs (NRW, 2018c). It is difficult to estimate the number of seals in the SAC with confidence as grey seals are wide ranging. They are most commonly observed within the SAC around the Lleyn Peninsula, Bardsey Island and the islands along the south Lleyn coast, with variation in counts throughout the year. Non-pupping seals are present year round at the moulting and resting haul-out sites distributed throughout the SAC, usually either singularly or in small numbers, with use of Bardsey Island peaking in summer months (NRW, 2018c). There are large breeding colonies on the Lleyn Peninsula and Bardsey Island, with a high proportion using sea caves in the SAC for pupping. Use of sea caves is similar to the grey seals in the south-west Wales population but unusual compared to breeding behaviour compared to elsewhere in the UK (NRW, 2018c). The North Wales area as a whole is considered important for female seals year round and within SAC males rarely comprise more than 25% of any assembly (NRW, 2018c).

The bottlenose dolphins in the Lleyn Peninsula and the Sarnau SAC also do not form a discrete site-based population and are considered part of the Irish Sea MU, which also includes the Cardigan Bay SAC dolphins. Dolphins associated with Cardigan Bay group move into and through the Lleyn Peninsula and the Sarnau SAC and also interact with dolphins from the SAC (NRW, 2018c). The bottlenose dolphins of the Lleyn Peninsula and the Sarnau SAC are likely wide ranging and interact with other individuals from more distant MUs, including those from the Offshore Channel and SW England MU. The SAC contains important feeding areas for bottlenose dolphins and it is probable that females nurse their young within the site (NRW, 2018c).

### **Conservation Objectives**

The conservation objectives of the SAC seek to maintain (or restore) the habitat and species features, as a whole, at (or to) favourable conservation status within the site (NRW, 2018c). The following conservation objectives relate to bottlenose dolphin and grey seal:

1. The species population is maintaining itself on a long-term basis as a viable component of its natural habitat. Important elements include; population size; structure, production and condition of the species. As part of this objective, it should be noted that;
  - a. Contaminant burdens derived from human activity are below levels that may cause physiological damage, or immune or reproductive suppression for bottlenose dolphins and grey seals.
  - b. For grey seal, populations should not be reduced as a consequence of human activity.
2. The species population within the site is such that the natural range of the population is not being reduced or likely to be reduced for the foreseeable future. As part of this objective, it should be noted that for bottlenose dolphin and grey seal:
  - a. Their range within the SAC and adjacent inter-connected areas is not constrained or hindered.
  - b. There are appropriate and sufficient food resources within the SAC and beyond.
  - c. The sites and amount of supporting habitat used by these species are accessible and their extent and quality is stable or increasing.
3. The presence, abundance, condition and diversity of habitats and species required to support this species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. Important considerations include; distribution; extent; structure; function and quality of habitat; prey availability and quality. It should be noted that for the bottlenose dolphin populations should be increasing. As part of this objective, it should also be noted that;
  - a. The abundance of prey species subject to existing commercial fisheries needs to be equal to or greater than that required to achieve maximum sustainable yield and secure in the long term.
  - b. The management and control of activities or operations likely to adversely affect the species feature is appropriate for maintaining it in favourable condition and is secure in the long term.
  - c. Contamination of potential prey species should be below concentrations potentially harmful to their physiological health.
  - d. Disturbance by human activity is below levels that suppress reproductive success, physiological health or long-term behaviour.

### **Bristol Channel Approaches SAC**

The Bristol Channel Approaches SAC is a relatively large (5,850 km<sup>2</sup>) site, lying along the south-west coasts of Wales and England; it straddles the Bristol Channel from Carmarthen Bay in the north to the northern coasts of Devon and Cornwall in the south. The SAC is 83.4 km from the Proposed Development Site Boundary, and is designated solely for the harbour porpoise. This site supports a diversity of habitat types, from reefs to mudflats, which in turn supports an estimated 4.7% of the UK Celtic and Irish Sea MU population (NRW, 2023b). Harbour porpoise presence varies seasonally within the SAC, but is recognised as important for porpoises particularly during the winter when high densities persistently occur (NRW, 2023b).

### **Conservation Objectives**

The conservation objectives for the SAC are to ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining favourable conservation status for harbour porpoise in UK waters (NRW, 2023b). In the context of natural change, this will be achieved by ensuring that:

1. Harbour porpoise is a viable component of the site.
2. There is no significant disturbance of the species.
3. The condition of supporting habitats and processes, and the availability of prey is maintained.

### **North Anglesey SAC**

The North Anglesey Marine SAC is located off north-west Wales and extends from the northern coast of the Isle of Anglesey into the Irish Sea, encompassing an area of 3,249 km<sup>2</sup>. The SAC is 136.1 km from the Proposed Development Site Boundary, and is designated solely for the harbour porpoise. The site is an area of importance for harbour porpoise, persistently containing densities with the top 10% of those recorded for the UK Celtic and Irish Seas MU population (NRW, 2023c).

### **Conservation Objectives**

The conservation objectives for the SAC are to ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining favourable conservation status for harbour porpoise in UK waters (NRW, 2023c). In the context of natural change, this will be achieved by ensuring that:

1. Harbour porpoise is a viable component of the site.
2. There is no significant disturbance of the species.
3. The condition of supporting habitats and processes, and the availability of prey is maintained.

### **5.2.3.2 Determination of LSE**

This section provides an assessment undertaken to conclude whether it can be determined that there will be no LSE as a result of the Proposed Development on relevant marine mammal qualifying features of the 41 SACs listed in Table 5-2.

### **Temporary and long term loss and/or disturbance of seabed habitats**

Temporary and long term seabed habitat loss and/or disturbance associated with the Proposed Development could result in a loss of Annex II marine mammal foraging habitat. However, this loss and/or disturbance will only represent a very small fraction of the known foraging ranges of these highly mobile species. The impact will be very localised (see ES Chapter 8: Marine Biodiversity and Chapter 10: Coastal Processes), particularly in the context of the wider available habitat. In addition, as the works associated with the Proposed Development will take place within an active harbour, it is unlikely that this area represented regular foraging habitat for the marine mammal baseline. Therefore, there is no potential for LSE to Annex II marine mammal features at any of the identified SACs as a result of the Proposed Development footprint during the construction or operation phase, and this impact is screened out from further assessment for all SACs.

### **Increased SSCs and associated deposition**

Increases in SSCs and associated deposition as a result of dredging activities during the construction phase could have both direct and indirect impacts on marine mammals. Direct impacts could result in impaired visibility and therefore foraging ability, which might potentially reduce foraging success, while indirect impacts would include effects on prey species. However, marine mammals are well known to forage in tidal areas where water conditions are turbid and visibility conditions poor. The qualifying Annex II marine mammal features (bottlenose dolphin, harbour porpoise, grey seal) commonly frequent coastal areas, so would likely be tolerant of turbid and silty water. However, it is unlikely that Fishguard Harbour is prime foraging habitat due to the extremely weak tidal currents within the Harbour. Although increased SSCs may arise during activities within the Proposed Development Site Boundary, the variation in SSC is not considered to be significant when compared

with the natural range likely to be encountered within Fishguard Harbour. Significant plumes of increased SSC are not anticipated; the maximum impact range is expected to be highly localised, and sediments will rapidly dissipate to below background concentrations over one tidal excursion (see ES Chapter 10: Coastal Processes for full details). Therefore, there is no potential for LSE to Annex II marine mammal features at any of the identified SACs as a result of the Proposed Development's dredging activities, and this impact is screened out from further assessment for all SACs.

### **Changes in water quality (including release of sediment bound contaminants)**

Changes in water quality could arise from dredging activities during the construction phase; this includes the potential for the release of sediment bound contaminants. The extent of sediment dispersal is not expected to cause significant elevations in water column contamination, as chemical sediment analysis undertaken for the installation of the replacement linkspan previously suggested an overall low level of contamination in Fishguard Harbour (RPS, 2018b). In addition, the temporary and localised changes in water column contamination levels are considered unlikely to produce lethal and sub-lethal effects in the highly mobile Annex II marine mammal species (the concentrations required to produce these effects are generally acquired through long-term, chronic exposure to prey species in which contaminants have bioaccumulated). Therefore, there is no potential for LSE to Annex II marine mammal features at any of the identified SACs due to changes in water quality during construction, and this impact is screened out from further assessment for all SACs.

### **Accidental pollution to the surrounding environment**

There is a risk of accidental pollution from vessels and equipment during the construction and operation phases. However, as discussed in section 5.2.2.2, pollution events are considered unlikely. In addition, it is anticipated that the risk of accidental pollution will be further reduced due by the implementation of tertiary mitigation (standard sectoral practice (IEMA, 2024)), such as an EMP, which will include a MSCP, and include planning for accidental spills, address all potential contaminants that could be released, and include key emergency contact details. The plans will also set out good industry practice and relevant guidelines for preventing pollution at sea as discussed in section 5.2.2.2. Therefore, similarly to Annex II diadromous fish, in the unlikely event of an accidental pollution event occurring, any indirect effects on Annex II marine mammals from the accidental release of pollutants are not anticipated to lead to a significant effect on the conservation objectives of relevant European sites. Therefore, there is no potential for LSE to Annex II marine mammal features at any of the identified SACs as a result of accidental pollution during the Proposed Development and this impact is screened out from further assessment for all SACs.

### **Underwater noise from construction noise**

Similarly to diadromous fish (section 5.2.2.2), impact piling of steel piles during the construction phase has the greatest potential to cause auditory injury or TTS and/or behavioural disturbance (including barrier effects) in marine mammals. There is potential for harbour porpoises, bottlenose dolphins and/or grey seals to be present within or transiting through the Proposed Development boundary and potential ZOI during the piling.

The relevant thresholds for the onset of effects for marine mammals used in the underwater noise modelling in the ES Chapter 14: Underwater Noise for impulsive noise are presented in Table 5-4. Further commentary on the background of underwater noise and its impact on marine mammals is presented in ES Chapter 8: Marine Biodiversity.

**Table 5-4: Acoustic thresholds for auditory injury, TTS onset and behavioural disturbance for impulsive noise for marine mammals (National Marine Fisheries Service (NMFS, 2024); Nedwell *et al.*, 2007, Sinclair *et al.*, 2023, Tougaard, 2021)**

| Hearing group                                    | Parameter                     | Auditory injury (dB) | TTS (dB) | Behavioural disturbance |
|--------------------------------------------------|-------------------------------|----------------------|----------|-------------------------|
| High Frequency cetaceans (bottlenose dolphin)    | L <sub>P</sub> , (unweighted) | 230                  | 224      | 160 dB L <sub>P</sub>   |
|                                                  | SEL, (weighted)               | 193                  | 178      |                         |
| Very High Frequency cetaceans (harbour porpoise) | L <sub>P</sub> , (unweighted) | 202                  | 196      |                         |
|                                                  | SEL, (weighted)               | 159                  | 144      |                         |
| Phocid Carnivores in Water (grey seal)           | L <sub>P</sub> , (unweighted) | 223                  | 217      |                         |
|                                                  | SEL, (weighted)               | 183                  | 168      |                         |

While it is acknowledged that NRW prefer the use of 143 dB SELss over the 160 dB LP threshold, the use of the 160 dB LP is considered pragmatic in relation to the scale of the impact piling activity (four support piles piled intermittently over four days).

As assessed in the ES Chapter 14: Underwater Noise, auditory injury from impact piling was modelled out to 40 m for bottlenose dolphin, to 880 m for harbour porpoise and to 720 m for grey seal. The peak pressure is likely to exceed the TTS onset threshold of harbour porpoise out to 50 m, with only 10 m modelled for the bottlenose dolphin and grey seal, with sound exposure exceeding the TTS onset threshold out to a maximum 2,500 m, 4,300 m and 4,400 m for bottlenose dolphin, harbour porpoise and grey seal, respectively. The behaviour disturbance threshold was exceeded up to 4,900 m for all three species, however this is limited to line of sight by the enclosure of Fishguard Bay.

Subsequently, while underwater noise from impact piling would most strongly affect harbour porpoise, it would have the potential to cause LSE to all three marine mammal qualifying features, causing acute effects (Erbe *et al.*, 2018). Other “noisy” activities (non-impulsive piling, dismantle/removal activities and dredging) may contribute to the cumulative effect of behavioural disturbance from underwater noise over the five month construction period. Noise from dredging may exceed the non-impulsive behavioural disturbance threshold for bottlenose dolphin (92 dB SPL), harbour porpoise (95 dB SPL) and grey seal (108 dB SPL) for up to 5,600 m, although there is considerable variation in the extent of the noise from the dredging depending on the location of the dredging vessel (see ES Chapter 8: Marine Biodiversity and ES Chapter 14: Underwater Noise).

Therefore, the potential for LSE on any Annex II features of European sites as a result of underwater noise arising from construction activities cannot be discounted. Due to this potential pathway and the connectivity of marine mammal populations throughout the MUs, there is potential for LSE on Annex II marine mammal features at any of the identified SACs as a result of underwater noise from piling. Therefore this impact has been screened in for further assessment for West Wales Marine SAC for harbour porpoise, Cardigan Bay SAC for bottlenose dolphin and grey seal, and Llyn Peninsula and the Sarnau SAC for bottlenose dolphin, with a sequential approach to be undertaken with regard to AA for the remaining 39 SACs listed in Table 5-2 should an adverse effect on site integrity (AEOSI) not be ruled out for West Wales Marine SAC and Cardigan Bay SAC in section 6.

### Underwater noise from vessels

As discussed in section 5.2.2.2, there is the potential for two additional construction vessels onsite at any one time over the approximately five month construction phase. This will not represent a

significant change from the baseline vessel traffic conditions in the already busy Fishguard Harbour, and marine mammals, particularly harbour porpoise, will generally avoid areas of high anthropogenic activities. Therefore, there is no potential for LSE to Annex II marine mammal features at any of the identified SACs with these qualifying features as a result of underwater noise from vessels during the Proposed Development and this impact is screened out from further assessment for all SACs.

### **Increased risk of collision with vessels**

Vessels associated with construction activities are unlikely to represent additional disturbance that is discernible above the already high levels of anthropogenic activity in Fishguard Harbour. Given the nature of harbours, vessels will also mainly be stationary or travelling at low speeds making the risk of collision very low. Furthermore, through regular exposure to vessel movements, marine mammals utilising Fishguard Harbour are also expected to be habituated to high levels of vessel presence. Therefore, there is no potential for LSE to Annex II marine mammal features at any of the identified SACs as a result of vessel movements during construction, and this impact is screened out from further assessment for all SACs.

### **In-combination effects**

While there are seven other projects or plans currently considered in development within the 100 km screening buffer for Annex II marine mammal features (Figure 3-1), there is either no temporal overlap of these projects or plans with the Proposed Development or there is no spatial overlap of the published maximum disturbance ranges from underwater noise. Therefore, there are no other project or plans that are likely to have the potential to result in LSE to Annex II marine mammals features as a result of in-combination effects during the construction and operation phases of the Proposed Development. Therefore, this in-combination effects have been screened out from further assessment for all SACs.

### **Summary**

Table 5-5 provides a summary of the assessment on the five Welsh sites, and one relevant transboundary Welsh/English harbour porpoise site, indicating whether the LSEs on the identified SAC features were screened in or out. Potential LSEs due to underwater noise from construction activities will be assessed for further afield European sites within the MUs if AEOSI cannot be ruled out at the six SACs listed in Table 5-5.

**Table 5-5: Likely significant effects matrix for Annex II marine mammal features of the Welsh (and transboundary Welsh/English) SACs (C: Construction; O: Operation)**

| Impact                                                                      | Phase | West Wales Marine / Gorllewin Cymru Forol SAC | Cardigan Bay / Bae Ceredigion SAC |           | Pembrokeshire Marine / Sir Benfro Forol SAC | Lleyn Peninsula and the Sarnau / Pen Llŷn a'r Sarnau SAC |           | Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC | North Anglesey Marine / Gogledd Môn Forol SAC |
|-----------------------------------------------------------------------------|-------|-----------------------------------------------|-----------------------------------|-----------|---------------------------------------------|----------------------------------------------------------|-----------|--------------------------------------------------------|-----------------------------------------------|
| Qualifying feature                                                          |       | Harbour porpoise                              | Bottlenose dolphin                | Grey seal | Grey seal                                   | Bottlenose dolphin                                       | Grey seal | Harbour porpoise                                       | Harbour porpoise                              |
| Temporary and long term loss and/or disturbance of seabed habitats          | C     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |
|                                                                             | O     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |
| Increased SSCs and associated deposition                                    | C     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |
|                                                                             | O     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |
| Changes in water quality (including release of sediment bound contaminants) | C     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |
|                                                                             | O     | N/A                                           | N/A                               | N/A       | N/A                                         | N/A                                                      | N/A       | N/A                                                    | N/A                                           |
| Accidental pollution to the surrounding environment                         | C     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |
|                                                                             | O     | x                                             | x                                 | x         | x                                           | x                                                        | x         | x                                                      | x                                             |

| Impact                                        | Phase | West Wales Marine / Gorllewin Cymru Forol SAC | Cardigan Bay / Bae Ceredigion SAC |           | Pembrokeshire Marine / Sir Benfro Forol SAC | Lleyn Peninsula and the Sarnau / Pen Llŷn a'r Sarnau SAC |           | Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC | North Anglesey Marine / Gogledd Môn Forol SAC |
|-----------------------------------------------|-------|-----------------------------------------------|-----------------------------------|-----------|---------------------------------------------|----------------------------------------------------------|-----------|--------------------------------------------------------|-----------------------------------------------|
| Qualifying feature                            |       | Harbour porpoise                              | Bottlenose dolphin                | Grey seal | Grey seal                                   | Bottlenose dolphin                                       | Grey seal | Harbour porpoise                                       | Harbour porpoise                              |
| Underwater noise from construction activities | C     | ✓                                             | ✓                                 | ✓         | ✓                                           | ✓                                                        | ✓         | ✓                                                      | ✓                                             |
|                                               | O     | N/A                                           | N/A                               | N/A       | N/A                                         | N/A                                                      | N/A       | N/A                                                    | N/A                                           |
| Underwater noise from vessels                 | C     | ×                                             | ×                                 | ×         | ×                                           | ×                                                        | ×         | ×                                                      | ×                                             |
|                                               | O     | ×                                             | ×                                 | ×         | ×                                           | ×                                                        | ×         | ×                                                      | ×                                             |
| In-combination effects                        | C     | ×                                             | ×                                 | ×         | ×                                           | ×                                                        | ×         | ×                                                      | ×                                             |
|                                               | O     | ×                                             | ×                                 | ×         | ×                                           | ×                                                        | ×         | ×                                                      | ×                                             |
| × - Screened Out<br>✓ - Screened In           |       |                                               |                                   |           |                                             |                                                          |           |                                                        |                                               |

## 6 Stage 2: Information to Inform the Appropriate Assessment

The LSE Screening assessment identified that there is the potential for LSE on identified features within the Cardigan Bay SAC, Pembrokeshire Marine SAC, River Teifi SAC, West Wales Marine SAC, Lleyn Peninsula and the Sarnau SAC and Bristol Channel Approaches SAC during the construction and operational phases of the Proposed Development, which will be taken forward for appropriate assessment. A summary of these potential LSEs is provided in Table 6-1, with the impact pathway from underwater noise during piling. All other remaining potential effects on features of identified European Sites have been screened out in section 5 above and will therefore not be taken forward for appropriate assessment.

Appropriate assessment has been provided for the closest European site for each relevant qualifying feature. Based on NRW guidance for marine mammals (NRW, 2025b), an iterative process that assesses, in the first instance, the impacts on the European site within the relevant MU for each qualifying feature, which is closest to the Proposed Development. The conclusion from the site closest to the Proposed Development is then applied to the remaining sites. If it can be concluded that there is no AEOSI for the closest site, then any impact on European sites located at a greater distance from the Proposed Development would be of a lower magnitude and therefore an AEOSI can also be ruled out on those European sites.

It has not been the purpose of the section to repeat information provided in the ES, rather, a summary assessment has been provided with a cross-reference to the detailed information provided in the ES Chapter 8: Marine Biodiversity.

**Table 6-1: Summary of stage 1: screening for likely significant effect**

| European site                                          | Relevant qualifying features                                           | Project phase | Impact                       |
|--------------------------------------------------------|------------------------------------------------------------------------|---------------|------------------------------|
| Cardigan Bay/Bae Ceredigion SAC                        | Sea lamprey<br>River lamprey<br>Bottlenose dolphin<br>Grey seal        | Construction  | Underwater noise from piling |
| Pembrokeshire Marine/Sir Benfro Forol SAC              | Sea lamprey<br>River lamprey<br>Allis shad<br>Twaite shad<br>Grey seal | Construction  | Underwater noise from piling |
| River Teifi/Afon Teifi SAC                             | River lamprey<br>Atlantic salmon<br>Sea lamprey                        | Construction  | Underwater noise from piling |
| West Wales Marine/Gorllewin Cymru Forol SAC            | Harbour porpoise                                                       | Construction  | Underwater noise from piling |
| Lleyn Peninsula and the Sarnau/Pen Llyn a'r Sarnau SAC | Bottlenose dolphin<br>Grey seal                                        | Construction  | Underwater noise from piling |
| Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC   | Harbour porpoise                                                       | Construction  | Underwater noise from piling |
| North Anglesey Marine/Gogledd Môn Forol SAC            | Harbour porpoise                                                       | Construction  | Underwater noise from piling |

## 6.1 Embedded Mitigation

As part of the Proposed Development design, various plans will be developed according to published guidelines and best working practices for the prevention of pollution events and spread of INNS. These include the:

- development of and adherence to a Vessel Management Plan (VMP) and Navigation Safety Plan (NSP);
- development of, and adherence to a Construction Method Statement (CMS) along with a Code of Construction Practice (CoCP); and
- development of and adherence to an EMP, which will include a MPCP and an INNS Management Plan.

The MPCP will include best practice measures to prevent accidental spillage of chemicals during construction activities. An EMP will also be developed for the operational phase and manage the risks of all operational activities, including best practice measures to control pollution. Biosecurity control measures during operation will be included within the INNS Management Plan. All relevant Health and Safety Executive procedures will be followed during the construction and operational phases of the Proposed Development.

There are also a range of mitigation measures associated with underwater noise during the construction phase of the Proposed Development, which will include a 20-minute soft start and adoption of the JNCC guidelines for minimising the risk of injury to marine mammals from piling (JNCC, 2010). This will involve a 30-minute pre-piling visual watch for absence of marine mammals with a mitigation zone by a qualified Marine Mammal Observer. Although soft starts are more appropriate mitigation for marine mammals compared to fish, the 20-minute soft start may also act as a deterrent for qualifying fish features.

## 6.2 West Wales Marine/Gorllewin Cymru Forol SAC

Summary information has been provided below in Table 6-2 assessing the potential implications of the Proposed Development on the site's conservation objectives. The only qualifying feature of the West Wales Marine SAC site screened in for appropriate assessment is harbour porpoise (based on the screening assessment undertaken in section 5.1.3). The assessment has been conducted based on the likely occurrence of harbour porpoise as described in section 5.2.3.

**Table 6-2: Summary of HRA outcome for the West Wales Marine/Gorllewin Cymru Forol SAC**

| Conservation objective                                        | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Reference to evidence in ES                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To ensure harbour porpoise is a viable component of the site. | <p><b>Adverse effects alone</b></p> <p>Impacts identified from the Proposed Development on harbour porpoise include effects of underwater noise arising from construction activities, including impact piling, which is considered the worst-case scenario. Construction activities are predicted to be highly localised in spatial extent and of short-term duration, with a total maximal duration of two hours of impact piling spread over two to ten days, and other “noisy” construction activities occurring intermittently for up to five months.</p> <p>Any auditory injury and/or TTS impacts from underwater noise due to impact piling will be of local spatial extent and intermittent, with limited risk of injury (within 880 m). In addition, the implementation of a soft-start and pre-piling survey, as well as the Marine Mammal Mitigation Plan (MMMP), as an embedded mitigation measures will further reduce the distance in which individuals may be injured and the number of individuals injured further as they will be deterred beyond the predicted injury ranges.</p> <p>Behavioural disturbance due to construction activities will also be of local spatial extent, intermittent and reversible. Behavioural disturbance is estimated to a maximum of 5.6 km from the source location and although the Proposed Development and thus the area of disturbance is within the SAC, it is only a very small proportion of the total site. The</p> | <ul style="list-style-type: none"> <li>ES Chapter 8: Marine Biodiversity section 7.9.3 marine mammal impact assessment: <ul style="list-style-type: none"> <li>Underwater noise from piling and other activities</li> </ul> </li> <li>ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

| Conservation objective                                             | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Reference to evidence in ES                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                    | <p>area of disturbance is 98.5 km (estimated as the area of a circle, <math>A=\pi r^2</math>, where r equals 5.6 km), which represents just over 1% of the total SAC area. This method of estimating area of disturbance is based on using the maximum behavioural disturbance as the radius of the area and so provides a precautionary overestimate of the area within in which behavioural disturbance will occur, as the morphology of the coast (much of the disturbed 'circle' will be on land) and enclosed nature of Fishguard Bay will further reduce this area. The Site Boundary is also an area that is likely to be avoided by harbour porpoise due to the high level of anthropogenic activity (a working harbour) and high background noise levels dominated by the vessel activity at the ferry terminal. As the area is not key habitat for harbour porpoise within the SAC, it is also unlikely that the noise contours would cause barrier effects.</p> <p>Therefore, effects from underwater noise associated with the Proposed Development would not be expected to affect the harbour porpoise feature of the SAC or have population level effects, with less than 0.1% of the Celtic and Irish Seas MU population potentially disturbed. As such, underwater noise from construction activities is not predicted to impact the population from being able to maintain itself as a viable component of its natural habitat over the long term and the Proposed Development would not restrict this conservation objective from being achieved.</p> |                                                                                                                                                                                                                                                                                                                  |
| To ensure there is no significant disturbance of harbour porpoise. | <p><b>Adverse effects alone</b></p> <p>As described in the row above, disturbance effects associated constructions activities, including dredging as the worst-case scenario, are predicted to be of local spatial extent, short-term duration, intermittent and reversible. As discussed in ES Chapter 8: Marine Biodiversity and ES Chapter 14: Underwater Noise, although behavioural disturbance</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity section 7.9.3 marine mammal impact assessment: <ul style="list-style-type: none"> <li>– Underwater noise from piling and other activities</li> </ul> </li> <li>• ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

| Conservation objective                                                                                           | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reference to evidence in ES                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                  | <p>thresholds exceedances occur to 5.6 km, only 0.1% of the Celtic and Irish Seas MU population would be potentially disturbed. While behavioural disturbance area overlaps with 1% of the SAC, it is a very small proportion of the whole area available to harbour porpoise, within in an area (Fishguard Harbour) that is already likely to be avoided due to the high levels of anthropogenic activity and high background noise levels dominated by the vessel activity at the ferry terminal. The conservative estimate of 1% of the total SAC area is lower than the daily spatial and temporal threshold of '20% of the relevant area of the site in any given day' and therefore cannot be considered as significant disturbance. As discussed in ES Chapter 14: Underwater Noise, the behavioural disturbance ranges will also be limited to line of sight due to the enclosure of Fishguard Harbour by the northern breakwater of Fishguard Harbour to the North and the headland to the east, which minimise the volume of water for the noise to travel through. Once out of Fishguard Harbour, general shipping vessel noise (or general wind and wave noise) from the Irish Sea will also likely drown out the noise associated with dredging or other "noisy" activities at the Proposed Development.</p> <p>Therefore, no significant disturbance from underwater noise due to construction activities is predicted in the long term and it can be concluded that the Proposed Development will not prevent this conservation objective from being maintained.</p> |                                                                                                                                                                                                                                                                                                                                |
| <p>To ensure the condition of supporting habitats and processes, and the availability of prey is maintained.</p> | <p><b>Adverse effects alone</b></p> <p>There is no pathway for impact between underwater noise generated during construction activities and the habitats and supporting processes for harbour porpoise. With respect to the availability of prey (fish and shellfish), long term effects from piling or other "noisy" activities were not predicted (see the ES Chapter 8: Marine Biodiversity), therefore prey species</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity section 7.9.2: fish and shellfish ecology impact assessment: <ul style="list-style-type: none"> <li>– Underwater noise from piling and other activities</li> </ul> </li> <li>• ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

| Conservation objective | Summary of HRA findings                                                                                                                                                                                                                                                       | Reference to evidence in ES |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
|                        | populations are expected to be maintained in the long term. Therefore, the Proposed Development will not adversely affect the condition of habitats and species required to support harbour porpoise, and will not prevent this conservation objective from being maintained. |                             |

Based on the information presented above in Table 6-2, it is concluded that the Proposed Development will not adversely affect the integrity of the West Wales Marine SAC, alone or in combination with other plans or projects. There are no AEOSI on the West Wales Marine SAC.

### 6.3 Cardigan Bay/Bae Ceredigion SAC

Summary information has been provided below in Table 6-3 assessing the potential implications of the Proposed Development on the site's conservation objectives. The qualifying feature of the Cardigan Bay SAC site screened in for appropriate assessment are sea lamprey, river lamprey, bottlenose dolphin and grey seal (based on the screening assessment undertaken in sections 5.1.2 and 5.1.3). The assessment has been conducted based on the likely occurrence of sea lamprey, river lamprey, bottlenose dolphin and grey seal as described in sections 5.1.2 and 5.1.3.

**Table 6-3: Summary of HRA outcome for the Cardigan Bay/Bae Ceredigion SAC**

| Conservation objective                                                                                                   | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reference to evidence in ES                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To ensure the population of the species is maintained on a long-term basis as a viable component of its natural habitat. | <p><b>Adverse effects alone</b></p> <p>As per the assessment provided above for harbour porpoise, there is limited risk of injury to the bottlenose dolphin and grey seal features of the Cardigan Bay SAC from underwater noise (within 40 m for bottlenose dolphin and 720 m for grey seal). Low levels of disturbance in the form of behavioural response to underwater noise is predicted over the short term within 5.6 km of the dredging activities. As the SAC is located 15.8 km from the Proposed Development Site Boundary, it is unlikely that there will be overlap between the SAC and the (overestimated) area of behavioural disturbance due to construction activities. Fishguard Harbour is not anticipated to be a key habitat for grey seal or bottlenose dolphin, and so no significant disturbance is predicted. Therefore, the grey seal</p> | <ul style="list-style-type: none"> <li>ES Chapter 8: Marine Biodiversity: <ul style="list-style-type: none"> <li>section 7.9.2 fish and shellfish ecology impact assessment: underwater noise from piling and other activities;</li> <li>section 7.9.3 marine mammal impact assessment: underwater noise from piling and other activities</li> </ul> </li> <li>ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

| Conservation objective                                                                                                                                                     | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Reference to evidence in ES                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                            | <p>population as a viable component of the site will continue to be maintained in the long-term.</p> <p>Similarly to marine mammals, the risk of auditory injury to diadromous fish is limited (to within 670 m) from the piling activity so it is highly unlikely fish populations will be significantly affected given the localised nature of the impact. Behavioural disturbance to diadromous fish may also occur within 4.9 km of piling activities predicted over the short term, and so is unlikely to cause significant disturbance to the qualifying diadromous fish features of the SAC. Therefore, the sea lamprey and river lamprey populations as a viable components of the site will continue to be maintained in the long-term.</p> <p>Therefore, effects from underwater noise associated with the Proposed Development would not be expected to affect the sea lamprey, river lamprey, bottlenose dolphin or grey seal features of the SAC or have population level effects. As such, underwater noise from construction activities is not predicted to impact the species' populations from being able to maintain themselves as a viable component of its natural habitat over the long term and the Proposed Development would not restrict this conservation objective from being achieved</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| To ensure the species population within the site is such that the natural range of the population is not being reduced or likely to be reduced for the foreseeable future. | <p><b>Adverse effects alone</b></p> <p>There may be some low level of disturbance to sea lamprey, river lamprey, bottlenose dolphin and grey seal within the vicinity of the Proposed Development construction activities, resulting in potential highly localised avoidance behaviour. However, Fishguard Harbour is not anticipated to be a key habitat for any of the marine mammal or diadromous fish features due, in part, to high levels of anthropogenic activity, and so no significant reduction in their natural range is predicted due to noise contours causing barrier effects.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity: <ul style="list-style-type: none"> <li>– section 7.9.2 fish and shellfish ecology impact assessment: underwater noise from piling and other activities;</li> <li>– section 7.9.3 marine mammal impact assessment: Underwater noise from piling and other activities</li> </ul> </li> <li>• ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

| Conservation objective                                                                                                                                                                                                                                                       | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reference to evidence in ES                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                              | Therefore, effects from underwater noise associated with the Proposed Development would not be expected to affect the sea lamprey, river lamprey, bottlenose dolphin or grey seal features of the SAC or have population level effects. As such, underwater noise from construction activities is not predicted to reduce, either now or in the foreseeable future, the natural range of the species' populations over the long term and the Proposed Development would not restrict this conservation objective from being achieved.                                                                                                                                                          |                                                                                                                                                                                                                                                                                                               |
| To ensure that the presence, abundance, condition and diversity of habitats and species required to support species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. | <p><b>Adverse effects alone</b></p> <p>There is no pathway for impact between underwater noise generated during construction activities and the habitats required to support the sea lamprey, river lamprey, bottlenose dolphin or grey seal features of the SAC. With respect to the availability of prey for both marine mammals and diadromous fish (fish and shellfish), long term effects from piling or other “noisy” construction activities were not predicted (see rows above and the ES Chapter 8: Marine Biodiversity), therefore prey species populations are expected to be maintained in the long term. As such, the presence, abundance, condition and diversity of species</p> | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity section 7.9.2: fish and shellfish ecology impact assessment: <ul style="list-style-type: none"> <li>– Underwater noise from piling</li> </ul> </li> <li>• ES Chapter 14: Underwater Acoustics and associated appendices</li> </ul> |

Based on the information presented above in Table 6-3, it is concluded that the Proposed Development will not adversely affect the integrity of the Cardigan Bay SAC, alone or in combination with other plans or projects. There are no AEOSI on the Cardigan Bay SAC.

## 6.4 Pembrokeshire Marine/Sir Benfro Forol SAC

Summary information has been provided below in Table 6-4 assessing the potential implications of the Proposed Development on the site's conservation objectives. The qualifying feature of the Pembrokeshire Marine SAC site screened in for appropriate assessment are sea lamprey, river lamprey, allis shad and twaite shad (based on the screening assessment undertaken in sections 5.1.2 and 5.1.3). As there was no AEOSI for the Cardigan Bay SAC for grey seal (Table 6-3), it is assumed there is no AEOSI with regard to conservation objectives for grey seal associated with the Pembrokeshire Marine

SAC as it is an additional 5.3 km from the Proposed Development Site Boundary. The assessment has been conducted based on the likely occurrence of sea lamprey, river lamprey, allis shad, and twaite shad as described in sections 5.1.2 and 5.1.3.

**Table 6-4: Summary of HRA outcome for the Pembrokeshire Marine/Sir Benfro Forol SAC**

| Conservation objective                                                                                                   | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Reference to evidence in ES                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To ensure the population of the species is maintained on a long-term basis as a viable component of its natural habitat. | <p><b>Adverse effects alone</b></p> <p>The risk of auditory injury to diadromous fish is limited (to within 700 m) from the piling activity so it is highly unlikely fish populations will be significantly affected given the localised nature of the impact. Behavioural disturbance to diadromous fish (sea lamprey, river lamprey, allis shad and twaite shad) may also occur within 4.9 km of piling activities predicted over the short term. However, as the SAC is located 22.1 km from the Proposed Development Site Boundary, it is unlikely that there will be overlap between the SAC and the area of behavioural disturbance due to piling and so is unlikely to cause significant disturbance to the qualifying diadromous fish features of the SAC. Therefore, the sea lamprey, river lamprey, allis shad and twaite shad populations as a viable components of the site will continue to be maintained in the long-term.</p> <p>Therefore, effects from underwater noise associated with the Proposed Development (using piling as the worst-case scenario for diadromous fish) would not be expected to affect the sea lamprey, river lamprey, allis shad or twaite shad features of the SAC or have population level effects. As such, underwater noise from construction activities is not predicted to impact the species' populations from being able to maintain themselves as a viable component of its natural habitat over the long term and the Proposed Development would not restrict this conservation objective from being achieved.</p> | <ul style="list-style-type: none"> <li>Chapter 8: Marine Biodiversity:             <ul style="list-style-type: none"> <li>section 7.9.2 fish and shellfish ecology impact assessment: underwater noise from piling and other activities</li> </ul> </li> <li>ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |
| To ensure the species population within the site is such that the natural range of the population is                     | <p><b>Adverse effects alone</b></p> <p>There may be some low level of disturbance to sea lamprey, river lamprey, allis shad and twaite shad within the vicinity of</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Chapter 8: Marine Biodiversity:</li> </ul>                                                                                                                                                                                                                                                 |

| Conservation objective                                                                                                                                                                                                                                                       | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Reference to evidence in ES                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| not being reduced or likely to be reduced for the foreseeable future.                                                                                                                                                                                                        | <p>the Proposed Development piling activities, resulting in potential highly localised avoidance behaviour. However, Fishguard Harbour is not anticipated to be a key habitat for any of the diadromous fish features, and so no significant reduction in their natural range is predicted due to noise contours causing barrier effects.</p> <p>Therefore, effects from underwater noise associated with the Proposed Development (using piling as the worst-case scenario) would not be expected to affect the sea lamprey, river lamprey, allis shad and twaite shad associated with the SAC or have population level effects. As such, underwater noise from construction activities is not predicted to reduce, either now or in the foreseeable future, the natural range of the species' populations over the long term and the Proposed Development would not restrict this conservation objective from being achieved.</p>                                                                        | <ul style="list-style-type: none"> <li>– section 7.9.2 fish and shellfish ecology impact assessment: underwater noise from piling and other activities</li> <li>• ES Chapter 14: Underwater Noise and associated appendices</li> </ul>                                                                                         |
| To ensure that the presence, abundance, condition and diversity of habitats and species required to support species is such that the distribution, abundance and populations dynamics of the species within the site and population beyond the site is stable or increasing. | <p><b>Adverse effects alone</b></p> <p>There is no pathway for impact between underwater noise generated during construction activities and the habitats required to support the diadromous fish features of the SAC. With respect to the availability of prey for diadromous fish (fish and shellfish), long term effects from piling or other “noisy” construction activities were not predicted (see rows above and the ES Chapter 8: Marine Biodiversity), therefore prey species populations are expected to be maintained in the long term. As such, the presence, abundance, condition and diversity of species required to support the diadromous fish features will be maintained.</p> <p>Therefore, the construction activities of the Proposed Development will not impact on the presence, abundance, condition and diversity of habitats and species supporting the species in the long term, and will not prevent the distribution, abundance and populations dynamics of the qualifying</p> | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity section 7.9.2: fish and shellfish ecology impact assessment: <ul style="list-style-type: none"> <li>– underwater noise from piling and other activities</li> </ul> </li> <li>• ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

| Conservation objective | Summary of HRA findings                                                                                                                                                                           | Reference to evidence in ES |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
|                        | features within the site and population beyond the site from remaining stable or increasing. And so, the Proposed Development will not prevent this conservation objective from being maintained. |                             |

Based on the information presented above in Table 6-4, it is concluded that the Proposed Development will not adversely affect the integrity of the Pembrokeshire Marine SAC, alone or in combination with other plans or projects. There are no AEOSI on the Pembrokeshire Marine SAC.

## 6.5 River Teifi/Afon Teifi SAC

Summary information has been provided below in Table 6-5 assessing the potential implications of the Proposed Development on the site's conservation objectives. The qualifying feature of the River Teifi SAC site screened in for appropriate assessment are sea lamprey, river lamprey and Atlantic salmon (based on the screening assessment undertaken in section 5.1.2). The assessment has been conducted based on the likely occurrence of sea lamprey, river lamprey and Atlantic salmon as described in section 5.1.2.

**Table 6-5: Summary of HRA outcome for the River Teifi/Afon Teifi SAC**

| Conservation objective                                                                         | Summary of HRA findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Reference to evidence in ES                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To ensure the population of the species in the SAC is stable or increasing over the long term. | <p><b>Adverse effects alone</b></p> <p>The risk of auditory injury to diadromous fish is limited (to within 700 m) from the piling activity so it is highly unlikely fish populations will be significantly affected given the localised nature of the impact. Behavioural disturbance to diadromous fish (sea lamprey, river lamprey and Atlantic salmon) may also occur within 4.9 km of piling activities predicted over the short term. However, as the SAC is located 23.8 km from the Proposed Development Site Boundary, it is unlikely that there will be overlap between the SAC and the area of behavioural disturbance due to piling and so is unlikely to cause significant disturbance to the qualifying diadromous fish features of the SAC.</p> <p>Therefore, effects from underwater noise associated with the Proposed Development (using piling as the worst-case</p> | <ul style="list-style-type: none"> <li>ES Chapter 8: Marine Biodiversity section 7.9.2: fish and shellfish ecology impact assessment: <ul style="list-style-type: none"> <li>underwater noise from piling and other activities</li> </ul> </li> <li>ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |

scenario for diadromous fish) would not be expected to affect the sea lamprey, river lamprey or Atlantic salmon features of the SAC or have population level effects. As such, underwater noise from construction activities will not prevent the diadromous fish populations from remaining stable or increasing over the long term and the Proposed Development would not restrict this conservation objective from being achieved.

|                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To ensure the distribution of the species population is maintained.                                               | <p><b>Adverse effects alone</b></p> <p>There may be some low level of disturbance to sea lamprey, river lamprey, allis shad and twaite shad within the vicinity of the Proposed Development piling activities, resulting in potential highly localised avoidance behaviour. However, Fishguard Harbour is not anticipated to be a key habitat for any of the diadromous fish features, and so no significant reduction in their natural range is predicted due to noise contours causing barrier effects.</p> <p>Therefore, effects from underwater noise associated with the Proposed Development (using piling as the worst-case scenario) would not be expected to reduce the distribution of the sea lamprey, river lamprey or Atlantic salmon associated with the SAC. As such, the Proposed Development would not restrict this conservation objective from being maintained.</p> | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity section 7.9.2: fish and shellfish ecology impact assessment: <ul style="list-style-type: none"> <li>– underwater noise from piling and other activities</li> </ul> </li> <li>• ES Chapter 14: Underwater Noise and associated appendices</li> </ul> |
| To ensure there is sufficient habitat, of sufficient quality, to support the species population in the long term. | <p><b>Adverse effects alone</b></p> <p>There is no pathway for impact between underwater noise generated during construction activities and the habitats required to support the diadromous fish features of the SAC. Therefore, the Proposed Development will not prevent this conservation objective from being maintained.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• ES Chapter 8: Marine Biodiversity</li> </ul>                                                                                                                                                                                                                                          |

Based on the information presented above in Table 6-5, it is concluded that the Proposed Development will not adversely affect the integrity of the River Teifi SAC, alone or in combination with other plans or projects. There are no AEOSI on the River Teifi SAC.

## **6.6 Lleyn Peninsula and the Sarnau/Pen Llyn a'r Sarnau SAC**

The qualifying feature of the Lleyn Peninsula and the Sarnau SAC site screened in for appropriate assessment is bottlenose dolphin and grey seal (based on the screening assessment undertaken in section 5.1.3). As there was no AEOSI due to underwater noise associated with the Proposed Development for Cardigan Bay SAC for grey seal (Table 6-3), it is assumed there is no AEOSI with regard to conservation objectives for grey seal associated with the Lleyn Peninsula and the Sarnau SAC as it is an additional 67.6 km from the Proposed Development Site Boundary. It also follows that the conclusion of no AEOSI for Cardigan Bay SAC (Table 6-3) will be upheld for the bottlenose dolphin feature of the Lleyn Peninsula and the Sarnau SAC, as there is strong evidence that a single population of bottlenose dolphins use both SACs (NRW, 2025b).

It can be concluded that there is no risk of an adverse effect on the integrity of the Lleyn Peninsula and the Sarnau SAC as a result of underwater noise from construction activities, alone or in combination with other plans or projects.

## **6.7 Remaining SACs in the Marine Mammal MUs**

In line with NRW guidance (NRW, 2025b) for harbour porpoise and grey seals, as AEOSI has been ruled out for the closest Welsh sites designated for harbour porpoise and grey seal, it follows that AEOSI would be ruled out at the remaining Welsh, English, Scottish, Irish and French sites within the respective Celtic and Irish Seas MU and the OSPAR Region III interim MU.

## 7 Summary

Having regard to the relevant legislation and the methodology outlined in section 2, Stage 1: Screening for LSE was undertaken to ascertain whether or not the Proposed Development is likely to have a significant effect on any European site.

The potential for LSE could not be excluded at the screening stage for seven European sites, without further evaluation, or the application of mitigation measures intended to reduce effects of the Proposed Development on the European sites concerned.

A subsequent assessment to inform Stage 2: Appropriate Assessment of the implications of the Proposed Development on European sites allowed the introduction of measures intended to avoid or reduce the potential adverse effects of the Proposed Development on European sites. These measures ensure that the Proposed Development will not undermine the conservation objectives of the sites concerned, and as such will not adversely affect the integrity of any European site.

The Stage 2: Appropriate Assessment concluded that there is no risk of AOESI as a result of underwater noise associated with the Proposed Development, alone or in combination with other plans or projects, for any of the SACs within the Celtic and Irish Seas MU for harbour porpoise, the Irish Sea MU for bottlenose dolphins and the OSPAR Region III interim MU for grey seals.

## Glossary and Acronyms

### Glossary

| Term                          | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appropriate Assessment        | An assessment to determine the implications of a plan or project on a European site in view of that site's conservation objectives. An Appropriate Assessment forms part of the Habitats Regulations Appraisal (HRA) and is required when a plan or project (either alone or in combination with other plans or projects) is likely to have a significant effect on a European site.                                                                                                                                                                                                                                                                                                                                    |
| Annex I Habitat               | A natural habitat type of community interest, defined in Annex I of the Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive). The designation of Special Areas of Conservation (SAC) is required in the UK to ensure the conservation of these habitats. The protection afforded to sites designated prior to EU Exit persists in UK law.                                                                                                                                                                                                                                                                                                               |
| Annex II Species              | Animal or plant species of community interest, defined in Annex II of the Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (Habitats Directive). The designation of Special Areas of Conservation (SAC) is required in the UK to ensure the conservation of these species. The protection afforded to sites designated prior to EU Exit persists in UK law.                                                                                                                                                                                                                                                                                                              |
| Competent Authority           | The term derives from the Habitats Regulations and relates to the duties which the Regulations impose on public bodies and individuals. Regulation 7(1) defines competent authorities as '(a) any Minister of the Crown (as defined in the Ministers of the Crown Act 1975), government department, statutory undertaker, public body of any description or person holding a public office; (b) the Welsh Ministers; and (c) any person exercising any function of a person mentioned in sub-paragraph (a) or (b)'. In the context of a plan or project, the competent authority is the public body with the power to give a licence, permit, consent or other permission for work to proceed (Welsh Government, 2021). |
| Diadromous fish               | Diadromous fishes have evolved mechanisms to transition between seawater and freshwater environments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| EU-Exit                       | The withdrawal of the United Kingdom from the European Union.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| European site                 | A Special Area of Conservation (SAC), candidate SAC, a Special Protection Area (SPA), proposed SAC, potential SPA or Ramsar sites and are protected under the relevant statutory regimes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Habitats Regulations          | The Conservation of Habitats and Species Regulations 2017, The Conservation of Offshore Marine Habitats and Species 2017 and The Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Habitat Regulations Appraisal | A process required by the Habitats Regulations of identifying likely significant effects of a plan or project on a European site and (where Likely Significant Effects are predicted or cannot be discounted) carrying out an appropriate assessment to ascertain whether the plan or project will adversely affect the integrity of the European site. If adverse effects on integrity cannot be ruled out, the latter stages of                                                                                                                                                                                                                                                                                       |

| Term                               | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | the process require consideration of the derogation provisions in the Habitats Regulations.                                                                                                                                                                                                                                                                                                                                                                                |
| Likely Significant Effect          | Any effect that may reasonably be predicted as a consequence of a plan or project that may affect the conservation objectives of the features for which the European site was designated, but excluding trivial or inconsequential effects. A likely effect is one that cannot be ruled out on the basis of objective information. A 'significant' effect is a test of whether a plan or project could affect the site's conservation objectives (Welsh Government, 2021). |
| National Site Network              | The National Site Network comprises Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) designated (or proposed) on EU-Exit day and which formerly formed part of the Natura 2000 network, as well as any new sites designated under the Habitats Regulations under an amended designation process.                                                                                                                                                   |
| Natura 2000 network                | A coherent European ecological network of Special Areas of Conservation and Special Protection Areas comprising sites located within European Union Member States.                                                                                                                                                                                                                                                                                                         |
| Site Boundary                      | The area of Fishguard Harbour within which the Proposed Development infrastructure will be placed.                                                                                                                                                                                                                                                                                                                                                                         |
| Proposed Development               | All infrastructure of the Stena Line Fishguard Ferry Port Project.                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ramsar Site                        | Wetlands of international importance, designated under the Ramsar Convention.                                                                                                                                                                                                                                                                                                                                                                                              |
| Special Area of Conservation (SAC) | Special Areas of Conservation (SACs) are areas designated for the conservation of certain plant and animal species listed in the Directive.                                                                                                                                                                                                                                                                                                                                |
| Zone of Influence (Zol)            | The geographical extent over which impacts on a receptor may occur.                                                                                                                                                                                                                                                                                                                                                                                                        |

## Acronyms

| Acronym | Meaning                                              |
|---------|------------------------------------------------------|
| CD      | Chart Datum                                          |
| EIA     | Environmental Impact Assessment                      |
| EMP     | Environmental Management Plan                        |
| ES      | Environmental Statement                              |
| EU      | European Union                                       |
| HRA     | Habitat Regulations Assessment                       |
| IAMMWG  | Inter-Agency Marine Mammal Working Group             |
| IEMA    | Institute of Environmental Management and Assessment |
| IMO     | International Maritime Organisation                  |
| INNS    | Invasive Non-Native Species                          |
| IROPI   | Imperative Reasons of Overriding Public Interest     |
| JNCC    | Joint Nature Conservation Committee                  |

| Acronym | Meaning                                                             |
|---------|---------------------------------------------------------------------|
| JUB     | Jack Up Barge                                                       |
| LSE     | Likely Significant Effect                                           |
| LP      | maximal instantaneous Sound Pressure Level                          |
| MARPOL  | International Convention for the Prevention of Pollution from Ships |
| MHWS    | Mean High Water Springs                                             |
| MMMP    | Marine Mammal Management Plan                                       |
| MPCP    | Marine Pollution Contingency Plan                                   |
| MU      | Management Unit                                                     |
| NMFS    | National Marine Fisheries Service                                   |
| NRW     | Natural Resources Wales                                             |
| OSPAR   | Oslo Paris Convention                                               |
| PTS     | Permanent Threshold Shift                                           |
| RIAA    | Report to Inform Appropriate Assessment                             |
| RNLI    | Royal National Lifeboat Institution                                 |
| SAC     | Special Area of Conservation                                        |
| SEL     | Sound Exposure Level                                                |
| SPA     | Special Protection Area                                             |
| SPL     | Sound Pressure Level                                                |
| SSC     | Suspended Sediment Concentrations                                   |
| SW      | South-west                                                          |
| TTS     | Temporary Threshold Shift                                           |
| UK      | United Kingdom                                                      |
| WSDOT   | Washington State Department of Transport                            |
| Zol     | Zone of Influence                                                   |

## Units

| Unit            | Description      |
|-----------------|------------------|
| dB              | decibel          |
| km              | Kilometre        |
| km <sup>2</sup> | Square kilometre |
| m               | Metre            |
| nm              | Nautical mile    |

**Appendix A**    Standard Data Forms

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