

REPORT

Holyhead Waterfront Regeneration Scheme

Responses to Request For Information on Marine
Licence Application

Client: Conygar Holyhead Ltd.

Reference: PB8908-RHD-ZZ-XX-RP-Z-0077

Status: S0/P01.01

Date: 18 November 2022

HASKONINGDHV UK LTD.

Honeycomb
Edmund Street
Liverpool
L3 9NG
United Kingdom
Industry & Buildings
VAT registration number: 792428892

+44 151 2362944 **T**
+44 151 2272561 **F**
info.liv@gb.rhdhv.com **E**
royalhaskoningdhv.com **W**

Document title: Holyhead Waterfront Regeneration Scheme

Subtitle: Responses to Request For Information on Marine Licence Application
Reference: PB8908-RHD-ZZ-XX-RP-Z-0077
Status: P01.01/S0
Date: 18 November 2022
Project name: Holyhead Waterfront Regeneration Scheme
Project number: PB8908
Author(s): Ben Hughes

Drafted by: Ben Hughes, David Brew, Sarah
Marjoram, Gemma Starmore

Checked by: Ben Hughes

Date: 17/11/2022

Approved by: Jamie Gardiner

Date: 17/11/2022

Classification

Project related

Unless otherwise agreed with the Client, no part of this document may be reproduced or made public or used for any purpose other than that for which the document was produced. HaskoningDHV UK Ltd. accepts no responsibility or liability whatsoever for this document other than towards the Client.

Please note: this document contains personal data of employees of HaskoningDHV UK Ltd.. Before publication or any other way of disclosing, consent needs to be obtained or this document needs to be anonymised, unless anonymisation of this document is prohibited by legislation.

Table of Contents

1	Introduction	3
2	Coastal and Physical Processes	4
3	Benthic ecology	9
4	Marine Ornithology	10
5	Marine mammals	11
6	Water quality and WFD	27
7	Fish and Shellfish	31
8	Navigation	33
9	Cultural Heritage	34
10	References	35

Table of Tables

Table 5.1 Assessment of the potential for disturbance due to construction activities	13
Table 5.2 Summary of UK cetacean strandings and causes of death	17
Table 5.3 Predicted number of marine mammals at risk of collision	18
Table 5.4 Assessment of adverse effect on integrity	22
Table 5.6 Cumulative impact assessment	25
Table 6.1 Summary of measures for navigation ports and harbours (extracted from Cycle 2)	29
Table 6.2 Mitigation measures assessment	29

Table of Figures

Figure 2.1. Sediment release schedule for dredger and offshore disposal	6
Figure 2.2. Published flood-tide current flows (left) and ebb-tide current flows (right)	7
Figure 2.3. Modelled flood-tide current flows and ebb-tide current flows	7
Figure 2.4. Modelled flood-tide current flows using an expanded spatial extent	8
Figure 2.5. Modelled ebb-tide current flows using an expanded spatial extent	8

Appendices

Appendix A DML2163 Request for Further Information	
--	--

1 Introduction

A Marine Licence Application (ref. DML2163) for the proposed Holyhead Waterfront Regeneration Scheme was submitted to Natural Resources Wales (NRW) on 12 November 2021, supported by an Environmental Statement (ES), Non-Technical Summary and Technical Appendices (Royal HaskoningDHV, 2021).

A post-submission 'Request for Information' (Rfi) under the Marine Works (Environmental Impact Assessment) (EIA) Regulations 2007 (as amended) was issued by NRW, dated 13 July 2022. The Rfi collated comments from NRW's Technical Expert (NRW TE) and their stakeholders. For reference, the Rfi has been provided as **Appendix A** to this document.

1.1 Purpose of this document

This document sets out a tabulated, point-by-point response to the comments provided by NRW in the Rfi. Supplementary information and / or further clarification has been included where necessary, with appropriate signposting provided in the relevant table.

1.2 Response to Rfi

The following sections present responses to comments raised in the Rfi:

- **Section 2:** Coastal and physical processes;
- **Section 3:** Benthic ecology;
- **Section 4:** Marine ornithology;
- **Section 5:** Marine mammals;
- **Section 6:** Water quality and Water Framework Directive (WFD);
- **Section 7:** Fish and shellfish;
- **Section 8:** Navigation; and
- **Section 9:** Cultural heritage.

2 Coastal and Physical Processes

Rfl comment	Response
NRW TE require that further clarification on both the volume of sediment to be excavated and the sediment grain size distribution of the sediment being excavated is provided. NRW TE requested clarification as to what this volume of sediment is in terms of percentage of the total area under the breakwater that will be dredged that makes up the sediment plume and sediment deposition predictions. Information was also requested on the time step used in the model simulation to model the sediment released during the period of dredging.	The particle size data is described in detail in Section 7.5.10 of the ES with locations of vibrocores, cumulative particle size distribution curves and tabulated information on sediment characteristics. The ES reports that 67,000m³ of sediment will be dredged, all within the footprint of the proposed new breakwater. The volume of sediment that has been modelled for sediment plume and sediment deposition predictions is all (i.e. 100%) of the soft sediment under the footprint of the proposed breakwater. Information on the time step used in the model is provided in in Section 2.1.1 below.
Additional clarity was also requested on the contradiction of tidal current flow directions presented within the Figures of Chapter 7 of the ES to ensure confidence within the assessment.	The tidal atlas for Anglesey supports our initial statement in the ES that the flows outside the breakwater are generally to the east on the flood tide and to west on the ebb tide: https://www.cmbha.net/tide/tide-tables/ However, Figures 7.3 and 7.4 of the ES do describe the opposite; flow appears to be to the west on the flood tide and to the east on the ebb tide. An explanation of this apparent discrepancy is provided in Section 2.1.2 below.
Evidence that potential impacts from beach access requirements have been appropriately considered within the assessment is also required and justification in response to the comment raised by NRW TE relating to the use of a silt curtain rather than a cofferdam is also requested.	Further clarity is required from NRW in relation to this comment. Neither the use of a silt curtain nor cofferdam has been proposed in the ES and no preliminary ecological appraisal has been undertaken and reported.
NRW TE acknowledged that the tidal current velocities are low within the vicinity of the proposed breakwater and land-claims, and that the current only bed shear stresses are also very low and are unlikely to contribute to active sediment transport. However, they advised that simulations with and without breakwater and land claims should be carried out to assess the	Section 7.7.3 of the ES provides predictions of changes to bed shear stress for currents only, caused by the breakwater and land-claims, by predicting differences between the baseline (without breakwater and land claims) and the Proposed Development in place. The results are presented in Figures 7.30 (peak flood for a spring tide) and 7.31 (peak ebb for a spring tide) in the ES.

sensitivity of the bed shear stress to the non-linear interaction between non-breaking waves and the tidal currents.

Bed shear stresses combining tidal currents and waves have not been modelled. The main areas where an increased bed stress would be induced (on the assumption that erosion is the main concern) are where both current speed and wave height increase due to the Proposed Development. These areas would be limited in space, restricted to just outside the breakwater (due to wave reflection) and at its tip (increased velocity around the tip in combination with wave refraction). Hence, the simulation of bed shear stress to include the non-linear interaction between non-breaking waves and the tidal currents would be disproportionate to the potential impact, both in magnitude and extent.

2.1 Coastal and Physical Processes: Supplementary Information

2.1.1 Model time step

With respect to an incremental time step used in the model simulation of sediment release, the backhoe will dredge for 125 minutes to load one barge. The barge will then sail for 48 minutes to the disposal site and discharge for 10 minutes. The barge will then take 44 minutes to sail back to site. The total transport time of the barge including discharge takes 102 minutes. Based on this schedule and the backhoe working for 65 hours per week, which allows for downtime due to bad weather, refuelling, and equipment maintenance, the backhoe dredging will take 5.2 weeks to complete. **Figure 2.1** illustrates the modelled sediment release schedule.

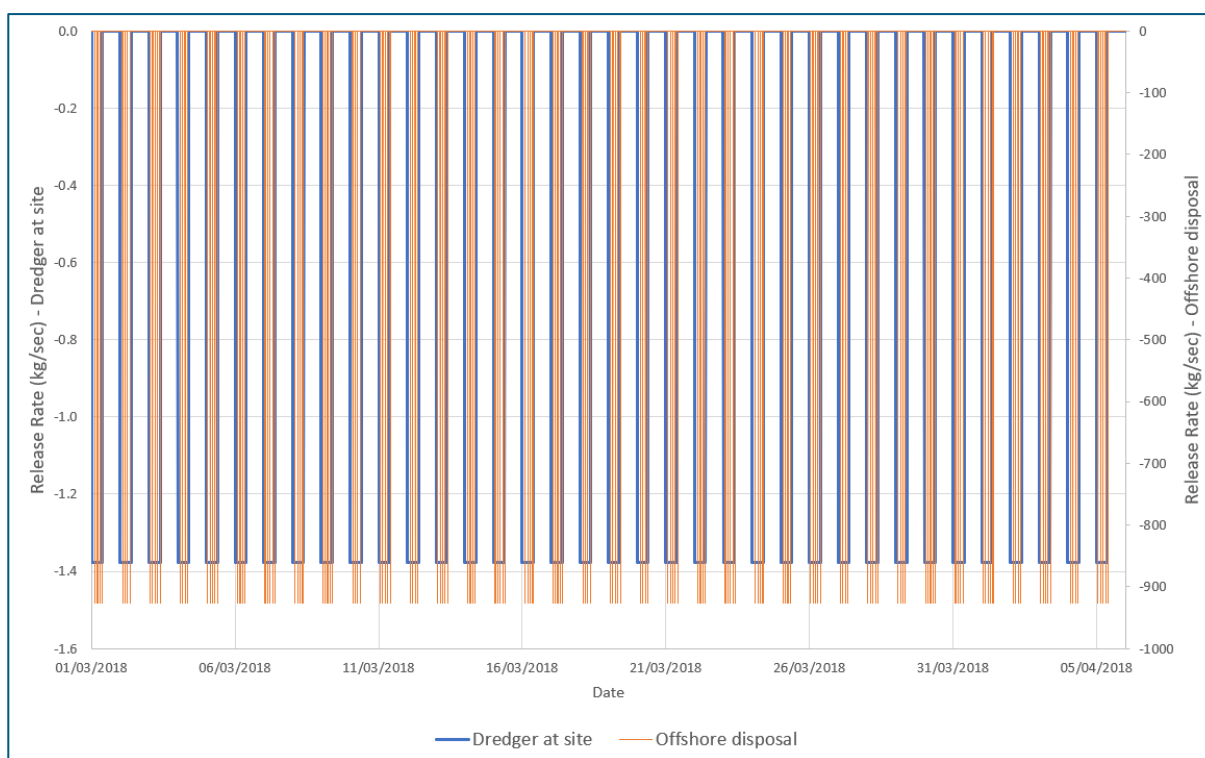


Figure 2.1. Sediment release schedule for dredger and offshore disposal

2.1.2 Tidal Current Flow Directions

The second Rfl comment in the table above relates to the following comment from NRW TE:

“For Chapter 7 - Figure 7.3 and Figure 7.4. Predicted baseline tidal current velocities at the time of peak flood for a spring tide and peak ebb conditions respectively, it is stated in section 7.5.7 that the flows are generally towards the east on a flood tide outside the Holyhead bay entrance and to the west on an ebb tide [Figure 2.2]. However, Figure 7.3 shows the tidal currents flowing towards the west on the seaward side of the breakwater [Figure 2.3]. Should they not be flowing towards the east given that the predictions are for flood spring conditions?”

Similarly, Figure 7.4 shows tidal flows for peak ebb conditions, but the flows outside the breakwater are towards the east. Have the figures been mixed up? We advise that the spatial model extent is increased to show the flows more clearly at the entrance to the harbour and bay and to show the offshore flows seawards of Holyhead breakwater in the event that there is recirculation patterns arising from headland eddies for example which are giving rise to the contradiction in the current directions offshore cited in the text and shown in Figure 7.3 and 7.4.”

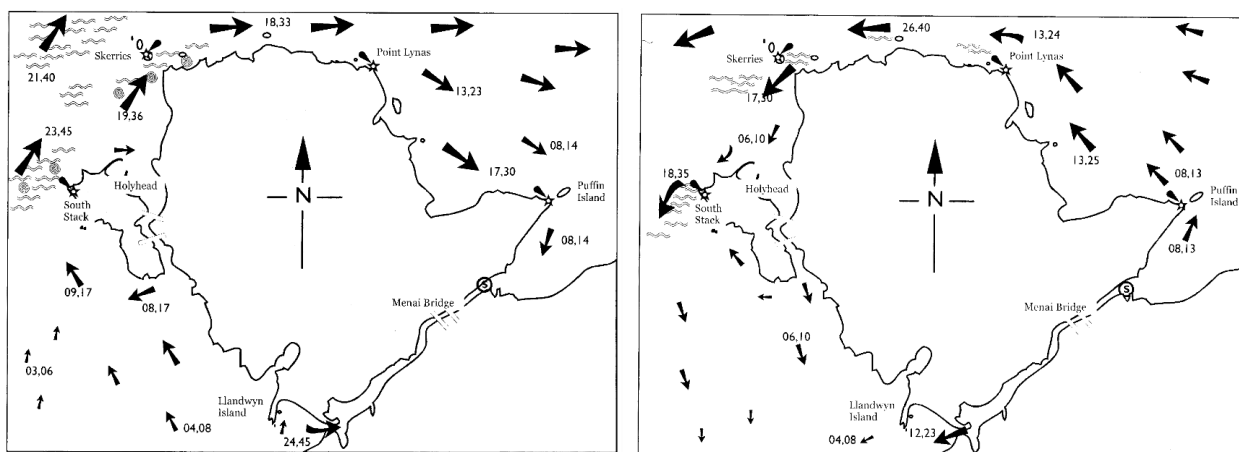


Figure 2.2. Published flood-tide current flows (left) and ebb-tide current flows (right)

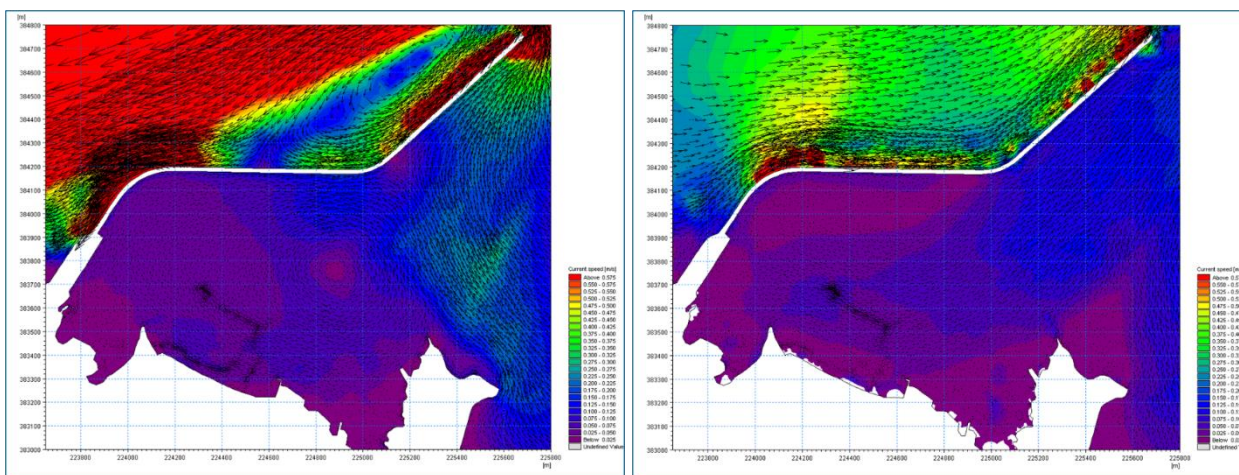


Figure 2.3. Modelled flood-tide current flows shown in Figure 7.3 of the ES (left) and ebb-tide current flows in Figure 7.4 (right)

There appears to be a contradiction in tidal current flow directions due to the scales of Figure 7.3 and Figure 7.4 in the ES. The focus of the chapter was changes to tidal currents inside the breakwater and so Figure 7.3 and Figure 7.4 were zoomed in to show the relevant areas. If the spatial extent is expanded, the model results show that the modelled regional flow patterns are consistent with published directions (i.e. flows outside the breakwater are towards the east on the flood tide and to the west on the ebb tide (see **Figure 2.4** and **Figure 2.5**).

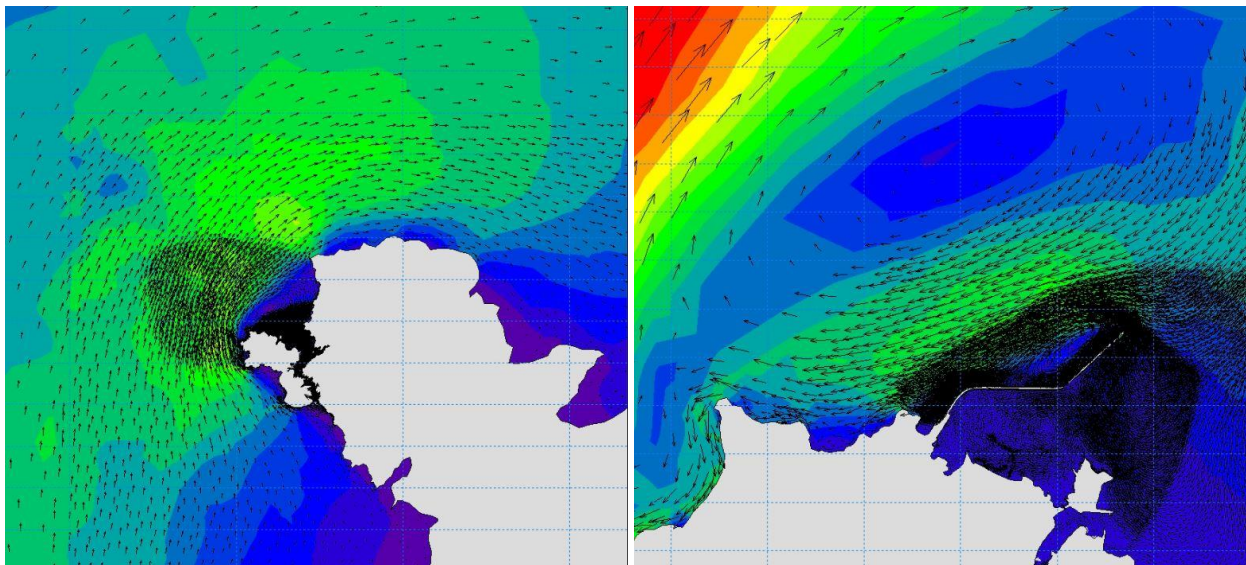


Figure 2.4. Modelled flood-tide current flows using an expanded spatial extent

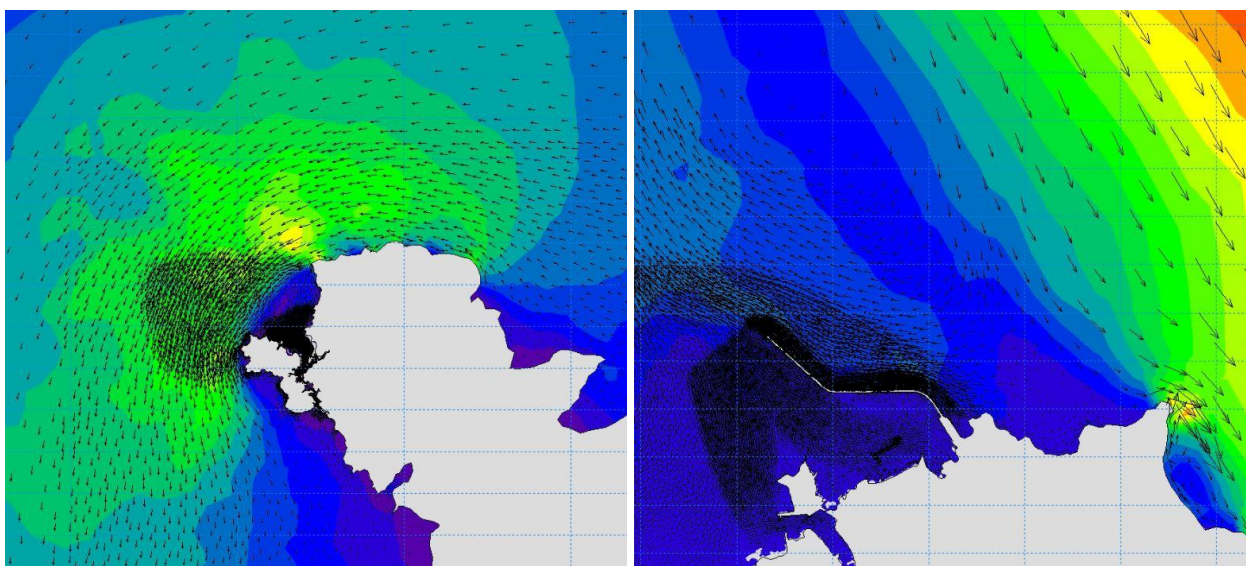


Figure 2.5. Modelled ebb-tide current flows using an expanded spatial extent

The apparent discrepancy is explained by the existence of gyres (rotating in a clockwise direction on the flood tide and anticlockwise on the ebb tide) immediately north of the breakwater. This means that although the currents in the Irish Sea are flowing east on the flood tide and west on the ebb tide, the currents along the breakwater are flowing in the opposite directions. Figure 7.3 and Figure 7.4 in the ES are zoomed in so that only the parts of the gyres closest to the outside of the breakwater are shown and the regional flow pattern is outside the figures.

Rfl comment	Response
Clarification was requested as to whether any maintenance dredging of the new marina and/or development areas will be required during the operational stage of the Project and, if so, how this has been incorporated within the assessment of impacts for the operational phase.	Given the low bed shear stress within the marine area and low levels of turbidity, maintenance dredging within the proposed new marina is not anticipated.
Recommendations have been provided by NRW TE within their consultation comments in terms of the biodiversity enhancement and INNS control measures that could be used for the subtidal habitats. The agreement of the specifications of such measures with NRW TE is likely to be included as a licence condition to be agreed post consent.	Noted. As detailed in Section 12.6 of the ES, a landscape and ecology management plan (LEMP) would be produced following appointment of a Contractor and prior to construction works commencing. The LEMP will be produced in consultation with NRW to ensure that measures proposed are adequate and practicable. It is considered that this will form a condition to the licence.

Rfl comment	Response
NRW TE have indicated that as the work will be taking place during the bird breeding season, the construction phase of the project has the potential to damage or destroy the nests or eggs. NRW TE also notes that the breeding bird surveys are over three years out of date. Therefore in lieu of updating breeding bird surveys, NRW TE have advised a check for nesting birds is undertaken before construction takes place and suitable buffers are put in place around any active nests.	Noted. It has been accepted that a check for nesting birds would be required prior to construction and is included as a measure in Section 15.6 of the ES. It is understood that this would likely form a condition of the Marine Licence.

Rfl comment	Response
NRW TE do not recommend the use of Temporary Threshold Shifts (TTS) onset as a proxy for disturbance and have presented a number of indicative fixed noise thresholds which should be reviewed, with sufficient justification for the method chosen. Impact conclusions should then be revisited and any changes to the assessments provided. NRW TE also advised inclusion of the potential for disturbance pathways from recreational craft. Mitigation measures, in the form of adherence to codes of conduct, were suggested within NRW TE's comments.	The potential for disturbance of marine mammals is discussed in Section 5.1.1.
A review of the collision impact assessment was also recommended to ensure it is proportional. Clarification on the approach is requested along with the. Mitigation measures, in the form of adherence to codes of conduct, were suggested within NRW TE's comments	The potential for increased collision risk to marine mammals is discussed in Section 5.1.2.
NRW TE recommended the use of Marine Mammal Management Units (MMMUs) when determining Adverse Effect on Site Integrity for marine mammal site features in Wales. This should be reviewed, along with the above comments relating to use of TTS and the potential for physical disturbance from recreational vessel activity and the conclusions of the shadow HRA updated as necessary.	Further information on the screening of Likely Significant Effect (LSE) on marine mammals has been provided in Section 5.1.3.1, and the potential for disturbance is discussed in Section 5.1.1.2.

5.1 Marine Mammals: Supplementary Information

5.1.1 Disturbance effects from underwater noise

5.1.1.1 Disturbance from construction activities

As noted in Section 14.6 of the ES, the potential sources of underwater noise during construction activities are dredging and rock placement.

The sensitivity of marine mammals to disturbance as a result of underwater noise during construction activities is considered to be medium as a precautionary approach. Marine mammals within the potential disturbance area are considered to have limited capacity to avoid such effects, although any disturbance to marine mammals would be temporary and they would be expected to return to the area once the disturbance had ceased or they had become habituated to the sound.

If the response is displacement from the area, it is predicted that marine mammals will return once the activity has been completed and therefore any impacts from underwater noise as a result of construction activities will be both localised and temporary. Therefore, there is unlikely to be the potential for any significant disturbance impact on marine mammals.

Southall *et al.* (2007) presents a review of behavioural response studies in marine mammals, according to the behavioural severity scores. One study recorded a significant behavioural response on a single harbour seal at a received level of 100 dB to 110 Db re 1 μ Pa (rms), although other studies found no response much higher received levels of up to 140 Db re 1 μ Pa (rms).

During a study on harbour porpoise during the construction of two Scottish windfarms (Beatrice Offshore Windfarm and Moray East Offshore Windfarm) (Benhemma-Le Gall *et al.*, 2021), harbour porpoise presence decreased with increased background noise from construction activity. A reduction in porpoise presence was detected up to 4km from construction vessel activity. This reported 4km reduction in porpoise presence has been used as a potential disturbance range for construction activities, such as dredging, as it is likely that such activities were undertaken at the time of the study.

Based on a disturbance radius of 4km, marine mammals could be disturbed over an area of up to around 50km²; however, the Proposed Development is located on the coastline, with a large breakwater to the west that would form an effective barrier to underwater noise propagation. The potential disturbance area has been halved to take account of a large proportion of the potential disturbance radius being either on the land or shielded by the breakwater. The potential disturbance area used to inform the below assessments is therefore 25km².

As harbour porpoise is the most sensitive marine mammal species, this potential disturbance area has been used for all species assessed, due to the absence of any other data to inform an assessment. All related construction activities are temporary and once the activity ceases it is expected that the marine mammals would return to baseline numbers.

An assessment of the maximum number of individuals that could be at risk of disturbance due to construction activities for the Proposed Development is presented in **Table 5.1**. This is a precautionary approach as it is unlikely that all marine mammal species would react in the same manner as harbour porpoise. The following assessment has been undertaken using the same marine mammal density estimates and reference populations presented in Section 14.5.5 of the ES, and for which all assessments in the ES were based.

The magnitude of the potential effect (without any mitigation) is assessed as negligible for harbour porpoise, minke whale, grey seal and harbour seal, with 1% or less of the relevant reference populations anticipated to be exposed to any temporary effect.

Table 5.1 Assessment of the potential for disturbance due to construction activities, including dredging and rock placement (magnitude levels based on the percentage of the reference population affected, as set out in Table 14.3 of the ES)

Potential Impact	Receptor	Estimated number of individuals in impact area (% of the reference population)	Magnitude
Disturbance during construction activities	Harbour porpoise	63.7 harbour porpoise (0.10% of MU) based density of 2.534/km ²	Temporary effect with very low magnitude (less than 1% of the reference population anticipated to be exposed to effect).
	Bottlenose dolphin	2.5 bottlenose dolphin (0.86% of the MU) based on a density of 0.1/km ²	Temporary effect with very low magnitude (less than 1% of the reference population anticipated to be exposed to effect).
	Risso's dolphin	0.78 Risso's dolphin (0.006% of MU) based on density of 0.031/km ²	Temporary effect with very low magnitude (less than 1% of the reference population anticipated to be exposed to effect).
	Grey seal	3.0 grey seal (0.33% of MU) based on density of 0.118/km ²	Temporary effect with very low magnitude (less than 1% of the reference population anticipated to be exposed to effect).

The assessment for the potential effects of underwater noise associated with construction activities, taking into account the medium sensitivity for disturbance and the very low magnitude, has been assessed as negligible (not significant) for all marine mammal species. There is therefore no change to the conclusion of the assessments presented in Sections 14.6.2 and 14.6.3 of the ES.

5.1.1.2 Disturbance from vessels

During the construction of the Proposed Development, it is expected that there would be a small increase in vessel traffic from the presence of the dredging and rock placement vessels to the potential for dredging materials to be disposed of via sea.

Based on high vessel traffic already present, the temporary nature of increased vessel numbers and the relatively low noise disturbances from the types of vessels being used during the construction phase, the magnitude of disturbance as a result of underwater noise from vessels during the construction phase has been assessed as very low.

The potential effects of disturbance due to vessel presence, taking into account medium sensitivity (harbour porpoise) to low sensitivity (bottlenose dolphin, Risso's dolphin and grey seal) and the very low magnitude, has been assessed as negligible. There is no change to the conclusion of the assessment presented in Sections 14.6.2 and 14.6.3 of the ES.

No mitigation is proposed for the potential for disturbance due to underwater noise from construction vessels, as the risk of any impact is negligible. However, vessel movements, where possible, will be incorporated into recognised vessel routes and hence to areas where marine mammals are accustomed to vessels, in order to reduce any impacts, including increased disturbance. All vessel movements will be kept to the minimum number that is required to reduce any potential impacts, including increased disturbance.

During the operational phase of the Proposed Development, there may be an increase in recreational vessel presence due to the increase in moorings available. These would predominantly be comprised of yachts and powerboats, with 250 new moorings to be developed. The uptake of these moorings is expected to increase over the years following completion of the marina. The highest increase in recreational vessels present is expected to be within the summer season.

There is the potential for sensitive species with high metabolic requirements, such as the harbour porpoise, to be more vulnerable to vessel noise, forcing individuals to make trade-off decisions between using energy to leave the area or remaining in exposed areas (Benhemma-Le Gall et al., 2021). This additional energy use may have biological consequences in the short and long-term (Pirodda et al. 2014), and harbour porpoise have been shown to be displaced by vessel activity up to 7km away depending on vessel type (Wisniewska et al., 2018). In a 2012 study, high-speed planing vessels (for example, small boats and jet skis) caused the most negative reactions in this species (Oakley et al., 2017).

Whilst short to medium term behavioural responses have been recorded from vessel disturbance, there are no indications of long-term or population level effects recorded to date; therefore, harbour porpoise are deemed to have a medium sensitivity to disturbance from vessels.

Other cetacean species in the study area may also be disturbed by vessels. For example, bottlenose dolphins have been shown to decrease foraging behaviour around wildlife tour boats, displaying horizontal avoidance behaviour and increased swimming speeds which may incur an energy cost (Machernis *et al.* 2018). There is also some evidence of habitat displacement of dolphin species if vessel traffic remains high for extended periods. However, disturbance of other cetacean species is expected to a lesser degree than harbour porpoise, hence for all other cetacean species a low sensitivity is deemed suitable.

Pinnipeds vary in their reaction to vessels depending on vessel type and proximity to haul out sites; however, disturbance (flushing behaviour) has been demonstrated at haul-out sites in the UK up to 200m away if there are pups present (Cates *et al.*, 2017). Land-based disturbance has been shown to cause higher levels of disturbance compared to marine sources, and smaller, quiet vessels like kayaks can cause the highest levels of flushing behaviour (Bonner, 2021). In areas of high vessel traffic, there are habituation effects and disturbance behaviour is generally reduced (Strong *et al.*, 2010). Seals are therefore considered to have a low sensitivity to disturbance from construction vessel traffic.

The distance at which animals may react to vessels is difficult to predict and behavioural responses can vary a great deal depending on species, location, type and size of vessel, vessel speed, noise levels and frequency, ambient noise levels and environmental conditions. If the behavioural response is displacement from the area, it is predicted that marine mammals will return once the activity has been completed, and therefore any impacts from underwater noise as a result of vessels will be localised and temporary.

There is little literature on the effects of underwater noise from recreational vessels. However, during the operational phase, all vessels utilising the marina would be directed to follow the Anglesey Marine Code¹ and Sea WiSe Code². A LEMP produced pre-construction (in consultation with NRW) would set out the manner in which information outlining these codes would be made available to marina users. It is likely that marina users that do not adhere to these codes would be sanctioned. Implementation of such measures would reduce the risk of disturbance to as low as reasonably practicable. With this in mind, the impact would be of negligible significance, which again reflects the assessment set out in Section 14.7.1 of the ES.

5.1.2 Updated collision risk assessment

Marine mammals in and around the Proposed Development would typically be habituated to the presence of vessels (given the existing levels of marine traffic, see Section 19.5 of the ES) and would be able to detect and avoid vessels. Predictability of vessel movement by marine mammals is known to be a key aspect in minimising the potential risks imposed by vessel traffic (Nowacek *et al.*, 2001, Lusseau, 2003, 2006).

¹ https://www.penllynarsarnau.co.uk/sites/default/files/2021-01/Documents/Anglesey_Marine_Coded9c3.pdf

² <https://cdn.cyfoethnaturiol.cymru/media/3513/sea-wise-code.pdf>

However, as a precautionary approach the sensitivity of marine mammals to collision risk with vessels during construction is considered to be high. While marine mammals are expected to be able to avoid collision with vessels, should a collision take place there is the potential for fatal injury to occur.

The approximate number of vessels on site at any time during construction is estimated to be up to four vessels. While construction vessels are at site, they would be slow moving and undertaking construction-related activity.

The Scottish Marine Animal Stranding Scheme (SMASS) record and investigate all marine mammal strandings reported to them in Scotland, and the Cetacean Strandings Investigation Programme (CSIP) record and investigate all recorded strandings of cetacean species in the UK. Cornwall Wildlife Trust (CWT) also investigates strandings. **Table 5.2** summarises the most recent data from these schemes. Mortality of cetaceans from vessel collisions can occur, although it accounts for a relatively small number of the strandings where cause of death was established. A limitation of these data is that the strandings data are biased to those carcasses that wash ashore.

To estimate the potential collision risk of vessels associated with the Proposed Development during construction, the potential risk rate per vessel has been calculated for all relevant species (**Table 5.2**), which is then used to calculate the total risk to marine mammal species due to the presence of an additional four vessels at any one time during construction (

Table 5.3).

To inform this assessment, the total number of each marine mammal species in UK waters has been compared against the total vessels present in UK waters, as well as the potential collision risk rate of each species based on the SMASS and CSIP data. The total UK populations are taken from IAMMWG (2022) for all cetacean species, and the total UK populations for seal species are taken from SCOS (2021). The total presence of vessels in UK waters is taken from the total vessel transits within the 2015 AIS data, which is the latest publicly available .

For all species, there is less than 0.001% at risk, and therefore a very low magnitude of impact. Regardless, construction vessel movements, where possible, will be incorporated into recognised vessel routes and hence to areas where marine mammals are accustomed to vessels in order to reduce any impacts. Vessel movements will be kept to the minimum number required.

Table 5.2 Summary of UK cetacean strandings and causes of death from physical trauma of unknown cause and physical trauma following probable impact from a ship or boat

Species	Number of strandings: CSIP ³ ; CWT ⁴ ; Welsh Coast ⁵ ; Grey Seals CWT ⁶ ; Harbour Seals (Natural England ⁷	Number of necropsies where cause of death established	Cause of death: physical trauma of unknown cause	Cause of death: physical trauma following probable vessel impact	Collision risk rate (number attributed to vessel strike / other physical trauma as proportion of total) ⁸
Harbour porpoise	CSIP = 5,401 CWT = 93 Wales = 181 SMASS = 1,198 Total = 6,873	CSIP = 1,251 CWT = 16 Wales = 18 SMASS = 350 Total = 1,635	CSIP = 67 CWT = 1 Wales = 2 SMASS = 4 Total = 74	CSIP = 14 CWT = 0 Wales = 0 SMASS = 2 Total = 16	0.055
Bottlenose dolphin	CSIP = 145 CWT = 2 Wales = 7 SMASS = 38 Total = 192	CSIP = 27 CWT = 0 Wales = 2 SMASS = 13 Total = 42	CSIP = 1 CWT = 0 Wales = 0 SMASS = 0 Total = 1	CSIP = 0 CWT = 0 Wales = 0 SMASS = 0 Total = 0	0.024
Risso's dolphin	CSIP = 137 CWT = 5 Wales = 2 SMASS = 59 Total = 203	CSIP = 23 CWT = 0 Wales = 0 SMASS = 9 Total = 32	CSIP = 1 CWT = 0 Wales = 0 SMASS = 0 Total = 1	CSIP = 1 CWT = 0 Wales = 0 SMASS = 0 Total = 1	0.063
Grey seal	CWT = 1,078 SMASS = 1,909 Total = 2,987	CWT = 86 SMASS = 470 Total = 556	CWT = 19 SMASS = 0 Total = 19	CWT = 0 SMASS = 4 Total = 4	0.041

³ CSIP (2004); CSIP (2005); CSIP (2011); CSIP (2018) [available from: <https://ukstrandings.org/csip-reports/>]

⁴ Cornwall Wildlife Trust (2018), Cornwall Wildlife Trust (2019), Cornwall Wildlife Trust (2012)

⁵ CSIP (2019), CSIP (2020)

⁶ CWT (2021), CWT (2020), CWT (2019), CWT (2018), CWT (2017), CWT (2016)

⁷ Natural England (2019).

⁸ Where species specific data is not available, the species group data is used

Table 5.3 Predicted number of marine mammals at risk of collision with the project's construction vessels, based on current UK collision rates and vessel presence

Marine mammal species	Collision risk rate (number attributed to vessels strike / other physical trauma as proportion of total number necropsied) ⁹	Estimated total number of individuals in UK waters ¹⁰	Estimated number of individuals at risk within UK waters	Annual number of vessels in UK and RoI for 2015 ¹¹	Number of marine mammals at risk of collision per vessel in UK waters	Number vessels associated with Proposed Development phase	Additional marine mammals at risk due to increase in vessel number (collision rate * proportion vessel increase)	Magnitude of impact
Harbour porpoise	0.055 at risk of collision	200,714	11,048.5 harbour porpoise at risk within UK waters	1,926,015	0.006	4	0.023	0.00004% (very low magnitude)
Bottlenose dolphin	0.024 at risk of collision	7,545	179.6 bottlenose dolphin at risk within UK waters	1,926,015	0.00009	4	0.0004	0.0001% (very low magnitude)
Risso's dolphin	0.063 at risk of collision	8,687	542.9 Risso's dolphin at risk within UK waters	1,926,015	0.0003	4	0.0011	0.000009% (very low magnitude)
Grey seal	0.041 at risk of collision	157,300	6,507.0 grey seal at risk within UK waters	1,926,015	0.003	4	0.014	0.0015% (low magnitude)

⁹ Where species specific data is not available, the species group data is used

¹⁰ Based on the IAMMWG (2022) UK population estimates for cetacean species, SCOS (2021) UK population estimates for seal species

¹¹ Latest publicly available data for vessel transits, divided by two to produce an approximate annual number of vessels within UK waters

During the operational phase of the Proposed Development, there is the potential for up to 250 recreational vessels to use the marina, although the highest number of additional vessels would only be present in the summer periods. Studies have shown that larger vessels are more likely to cause the most severe or lethal injuries, with vessels over 80m in length causing the most damage to marine mammals (Laist *et al.*, 2001). Recreational vessels would be much smaller than 80m in length, hence the risk of mortality in the event of a collision is likely to be lower. However, the presence of numerous smaller vessels travelling at varying speeds (including fast powerboats) may increase the risk of collision, thereby increasing the risk of injury and offsetting the reduced mortality risk. There is little literature on collision risk between small vessels and small cetaceans / pinnipeds (most literature is related to collision risk with larger cetaceans and larger vessels, e.g. Schoeman *et al.*, 2020).

It is recognised, therefore, that there is potential for the magnitude of impact to be greater in the operational phase than during the construction phase. However, marina users would be directed to comply with the Anglesey Marine Code and Sea WiSe Code, and the LEMP would set out the manner in which information outlining these codes would be made available to marina users. It is likely that marina users that do not adhere to these codes would be sanctioned. With this measure in place, it is anticipated that the risk of collision would be reduced to as low as reasonably practicable.

Taking into account the high marine mammal sensitivity, and the potential magnitude of very low for all marine mammal species during both construction and operation (with mitigation in place), the significance for any increase in vessel collision risk has been assessed as negligible (not significant) for all marine mammal species. There is therefore no change to the conclusion of the assessment presented in Section 14.6.5 and 14.7.2 of the ES.

5.1.3 Potential for Adverse Effect on Integrity (AEoI)

5.1.3.1 Potential for AEoI

The following designated sites have been reassessed based on the updated information on disturbance and collision risk in **Sections 5.1.1** and **5.1.2**, and in line with advice from NRW TE to approach assessment based on MMMUs:

- The North Anglesey Marine Special Area of Conservation (SAC);
- Pen Llŷn a'r Sarnau SAC; and
- West Wales Marine SAC.

Other designated sites are present within the relevant MMMUs for marine mammal species¹²; however, they are sufficiently far from the Proposed Development that there would be no potential for AEoI (with the largest potential effect range of 4km due to disturbance). In addition, undertaking an assessment on the above listed sites would generate the worst-case

¹² As presented within NRW's position on the use of Marine Mammal Management Units for screening and assessment in Habitats Regulations Assessments for Special Areas of Conservation with marine mammal features (NRW, 2020)

effects, as they are the closest site for each relevant marine mammal species, and therefore at risk of the highest level of effect.

The potential effects reconsidered are:

- Auditory injury due to construction activities;
- Disturbance due to construction activities; and
- Increase in collision risk during construction and operation phases.

5.1.3.2 Background information for the screened in marine mammal designated sites

Gogledd Môn Forol / North Anglesey Marine SAC

Background detail to this SAC, including the relevant Conservation Objectives (COs), is provided in Section 25.4.2 of the ES.

Guidance released in 2020 (by Joint Nature Conservation Committee (JNCC), the Department of Agriculture, Environment, and Rural Affairs (DEARA), and Natural England) states that for there to be no significant disturbance to the harbour porpoise designated SACs (including Gogledd Môn Forol / North Anglesey Marine and Gorllewin Cymru Forol / West Wales Marine SAC) states that;

“Noise disturbance within an SAC from a plan/project, individually or in combination, is significant if it excludes harbour porpoises from more than:

- 1. 20% of the relevant area of the site in any given day, or*
- 2. An average of 10% of the relevant area of the site over a season.”*

Llyn Peninsula and the Sarnau / Pen Llŷn a'r Sarnau SAC

The Pen Llŷn a'r Sarnau / Llyn Peninsula and the Sarnau SAC site covers an area of 1,460km², from the coastlines of the Llyn Peninsula and the northern part of Cardigan Bay (Countryside Council for Wales (CCW), 2009) and lists bottlenose dolphin and grey seal as qualifying features. Bottlenose dolphin and grey seal are Annex II species present at this site as a qualifying feature, but not a primary reason for site selection.

Bottlenose dolphin from the Pen Llŷn a'r Sarnau / Llyn Peninsula and the Sarnau SAC should be considered as part of the wider Wales population, including those of Cardigan Bay. Photo-identification studies have revealed that the dolphins present in this site travel between the Pen Llŷn a'r Sarnau / Llyn Peninsula and the Sarnau SAC and Bae Ceredigion / Cardigan Bay SAC. Both these sites are within Cardigan Bay and their population should be considered together. It was estimated in 2007 that there were 397 individuals within the Bae Ceredigion / Cardigan Bay SAC for the period 2001- 2007 (CCW, 2009). More recent population estimates for the wider Cardigan Bay vary between 254 and 330 animals (CV = 0.25 – 0.28) for the years 2011 and 2013 inclusive (Feingold and Evans, 2014).

Gorllewin Cymru Forol / West Wales Marine SAC

The Gorllewin Cymru Forol / West Wales Marine SAC, which covers an area of 7,376 km², has been recognised as an area within the top 10% predicted persistent high densities of harbour porpoise; the area included within the site covers important summer habitat for porpoises (April to September), while parts of the Cardigan Bay area are also identified as important in the winter periods (October to March) (JNCC and NRW, 2016; NRW and JNCC, 2017).

The Gorllewin Cymru Forol / West Wales Marine SAC is located within the CIS harbour porpoise MU (and therefore contains a proportion of the same harbour porpoise population as Gogledd Môn Forol / North Anglesey Marine SAC).

5.1.3.3 Assessment of potential for significant effect

An assessment has been carried out to determine the potential for significant effect in

Table 5.4.

While the assessment of potential adverse effects on integrity is focused on the three screened-in sites, the assessments undertaken would be the same for all other potential marine mammal SACs within the relevant MMMUs, as each of the assessments is based on the potential for effect to the MU as a whole, rather than for each SAC population. Therefore, as there is no potential for adverse effect on the screened-in SACs, there would be no adverse effect to any other SAC.

Table 5.4 Assessment of adverse effect on integrity

Potential effect	Assessment of potential for significant effect
Gogledd Môn Forol / North Anglesey Marine SAC	
Auditory injury due to construction activities	Underwater noise sources during the construction of the Proposed Development would include vessels transporting materials to the area, and noise generation associated with dredging activities and rock placement; however, potential effects would be temporary and highly localised to the harbour area. The potential for auditory injury (PTS or TTS) from dredging activities, rock placement and vessel use at the Proposed Development site has the potential to affect 0.22 harbour porpoise per activity, or less than 0.0004% of the CIS MU (see Sections 14.6.2, 14.6.3 and 14.6.4 of the ES). Therefore, there is no potential for adverse effect to the population of harbour porpoise that utilised the site due to auditory injury from underwater noise during construction activities.
Disturbance due to construction activities	As presented in Section 5.1.1, an additional assessment of the potential for disturbance to marine mammals, due to the construction activities, has been provided. This assessment assumes a disturbance range of 4km for harbour porpoise, resulting in a disturbance area of 24.14km² (when taking into account the coastline and location of the activities). For harbour porpoise, this potential disturbance would result in up to 64 individuals being disturbed, or up to 0.1% of the population. For disturbance thresholds, as stated in Section 5.1.3.2, this would result in up to 0.74% of the SAC being disturbed on any one day. Even with the disturbance event taking place over the whole summer season (as a worst-case assumption), an average of 0.74% of the seasonal area would be disturbed. Therefore, there is no potential for significant disturbance under the 20% spatial or 10% seasonal thresholds set out in the . Therefore, there is no potential for adverse effect to the population of harbour porpoise due to disturbance from underwater noise during construction activities.
Increase in collision risk during construction	Given the existing levels of shipping traffic around the Proposed Development is high, harbour porpoise would be able to detect and avoid vessels. An updated assessment for the potential for increased collision risk during construction has been presented in Section 5.1.2. This assessment concludes that up to 0.023 harbour porpoise, or 0.00004% of the MU population, may be at risk of collision during construction. Due to the temporary nature of the increase in vessel numbers, the low likelihood of collision risk and the low number at potential risk, there is no potential for adverse effect to the population of harbour porpoise within the site during construction.
Increase in collision risk during operation	During the operational phase, increased boat traffic would result in the potential for an increase in collision risk; however, given that vessels from the new marina / Yacht Basin would be recreational vessels (i.e. sailing vessels and small power crafts), and given the existing level of activity, there is expected to be a very low level of collision risk to harbour porpoise. All vessels utilising the marina would be directed to follow the Anglesey Marine Code and Sea WiSe Code of Conduct. Therefore, there is no potential for adverse effect to the population of harbour porpoise during the operational phase due to an increased collision risk.



Project related

Potential effect	Assessment of potential for significant effect
Lleyn Peninsula and the Sarnau / Pen Llyn a'r Sarnau SAC and Gorllewin Cymru Forol / West Wales Marine SAC	
Auditory injury due to construction activities	The potential for auditory injury (PTS or TTS) from dredging activities, rock placement and vessel use at the Proposed Development site has the potential to affect 0.22 harbour porpoises, 0.00003 bottlenose dolphin or 0.00004 grey seal per activity, or less than 0.0004%, 0.000001% and 0.000004% of the reference populations, respectively (see Sections 14.6.2, 14.6.3 and 14.6.4 of the ES). Therefore, there is no potential for adverse effect to the populations of harbour porpoise, bottlenose dolphin and grey seal that utilise the sites due to auditory injury from underwater noise during construction activities.
Disturbance due to construction activities	As presented in Section 5.1.1 , an additional assessment of the potential for disturbance to marine mammals, due to the construction activities, has been provided. This assessment assumes a disturbance range of 4km, resulting in a disturbance area of 24.14km ² (when taking into account the coastline and location of the activities). For harbour porpoise, bottlenose dolphin and grey seal, this potential disturbance would result in up to 64, 2.5 and 3 individuals being disturbed, respectively, or up to 0.1%, 0.86% and 0.33% of the reference populations, respectively. Therefore, there is no potential for adverse effect to the population of harbour porpoise, bottlenose dolphin or grey due to disturbance from underwater noise during construction activities.
Increase in collision risk during construction	The updated assessment presented in Section 5.1.2 concludes that up to 0.023 harbour porpoises (0.00004% of the MU population), 0.0004 bottlenose dolphin (0.0001% of the MU population) and 0.014 grey seal (0.0015% of the reference population), may be at risk of collision during construction. Due to the temporary nature of the increase in vessel numbers, the low likelihood of collision risk and the low number at potential risk, there is no potential for adverse effect to the population of either bottlenose dolphin or grey seal within the site during construction.
Increase in collision risk during operation	During the operational phase, increased boat traffic would result in the potential for an increase in collision risk; however, given that vessels from the new marina / Yacht Basin would be recreational vessels (i.e. sailing vessels and small power crafts), and given the existing level of activity, there is expected to be a very low level of collision risk to harbour porpoise. In addition, all vessels utilising the marina would be directed to follow the Anglesey Marine Code and Sea WiSe Code of Conduct. Therefore, there is no potential for adverse effect to the populations of harbour porpoise, bottlenose dolphin or grey during the operational phase due to an increased collision risk.

5.1.4 Updates to in-combination assessment

5.1.4.1 Updates to in-combination assessment for marine mammals

As noted in the response from NRW TE, the in-combination assessment presented in the HRA (Chapter 25 of the ES) focuses on underwater noise as a potential impact pathway. NRW TE recommend that the in-combination assessment should also include potential mortality (i.e. from collision risk).

An update to the assessment has been provided in **Table 5.5** below.

Table 5.5 In-combination assessment

Potential impact to marine mammals	Construction	Operation
Awel Y Mor		
Increased risk of collision	AyM included embedded mitigation measures to ensure there is no risk of collision to marine mammals, such as following the Sea WiSe Scheme Codes of Conduct, and therefore concluded that there would be a negligible magnitude of impact for all marine mammal species. Given the low number of vessels involved during the construction of the Proposed Development, there would not be a significant increase in vessel traffic using the area. As such, there would be no adverse effect as a result of the two projects.	AyM included embedded mitigation measures to ensure there is no risk of collision to marine mammals, such as following the Sea WiSe Scheme Codes of Conduct, and therefore concluded that there would be a negligible magnitude of impact for all marine mammal species. AyM is predicted to have negligible (not significant) impact from increased collision risk with vessels, as such there would be no adverse effect with the Proposed Development.
Morlais		
Increased risk of collision	The ES for Morlais assessed that the marine mammals within the project area may be at risk of increase in collision risk, resulting in up to 1.18 harbour porpoise (0.0011% of the reference population), up to 0.031 bottlenose dolphin (0.0076% of the reference population), up to 0.047 Risso's dolphin (0.0005% of the reference population), and up to 0.237 grey seal at risk of collision (0.0015% of the reference population), or less than 0.01% of the population at risk in all cases, and a negligible to minor significance. The Proposed Development has the potential for collision mortality in up to 0.00004% of the harbour porpoise population, 0.0001% of the bottlenose dolphin population, 0.000009% of the Risso's dolphin population, and 0.0015% of the grey seal population during construction.	During operation, there is the potential for collision risk at Morlais from both vessels and tidal turbines. For the potential for an increase in vessel collisions during operation, Morlais assessed that the marine mammals within the project area may be at risk of increase in collision risk, resulting in up to 1.18 harbour porpoise, up to 0.031 bottlenose dolphin, up to 0.047 Risso's dolphin, and up to 0.237 grey seal at risk of collision, or less than 0.01% of the population at risk in all cases, and a negligible to minor significance.

Potential impact to marine mammals	Construction	Operation
	In total, the Proposed Development and Morlais could cause an increase in vessel collision mortality in up to 0.00114% of the harbour porpoise population, 0.0077% of the bottlenose dolphin population, 0.00051% of the Risso's dolphin population, and 0.003% of the grey seal population. This would result in a low magnitude of impact for harbour porpoise, bottlenose dolphin, and grey seal, and very low for Risso's dolphin. There would be no adverse effect as a result of the two projects.	For the potential for collision risk with tidal turbines during operation, collision risk modelling was undertaken, with the results showing that up to 22.76 harbour porpoise (0.02% of the reference population), up to 0.99 bottlenose dolphin (0.25% of the reference population), up to 1.42 Risso's dolphin (0.02% of the reference population), and up to 4.6 grey seal (0.08% of the reference population) may be at risk of collision, with a minor significance. During operation, the Proposed Development is highly unlikely to contribute to any significant increase in collision-related mortality due to the small size of the recreational vessels and the implementation of directions to all users to follow the Anglesey Code of Conduct and Sea WiSe Scheme Code of Conduct. Morlais is predicted to have a minor adverse (not significant) impact from collision risk during operation, as such there would be no adverse in-combination effect with the Proposed Development.

6 Water quality and WFD

Project related

Rfl comment	Response
Clarification was requested on the conflicting statements between Tables 26.3 and 26.4 of the ES relating to the percentage of lower sensitivity habitats and the scoping in and/or out of this impact.	Table 26.4 of the ES should state that lower sensitivity habitats are scoped out of the assessment, as less than 1% of each habitat will be impacted.
Clarification was requested on the maintenance dredge requirements for the operational phase of the Project and how this has been considered within the assessment.	As set out in Section 7.4.6 of the ES, maintenance dredging is not anticipated to be required within the marina and therefore an assessment is not required.
NRW TE requested confirmation that the land reclamation associated with Newry Beach was included within the assessment, as was the assessment of risk of land-based spills entering the watercourse.	The reclamation area associated with Newry Beach has been included within the calculation for the 'marine structures' in Tables 26.3 and 26.5 of the ES. Construction-stage land-based spills have not been assessed given the control measures that will be put in place (as set out in Section 26.2.1.3 of the ES). These include adherence to GPPs and CIRIA guidance, the production of a Construction Environmental Management Plan (CEMP) and a detailed list of example measures is included on Page 559 of the ES.
NRW TE requested evidence to show how the scheme interacts with the mitigation measures associated with the water body's 'heavily modified' status has been adequately considered within the assessment, including cumulatively.	Section 26.3.3 discusses the mitigation measures that are in place and not in place in relation to the water body's heavily modified status. Additional information pertaining to measures that are applicable and how the Proposed Development would not threaten their implementation is provided in Section 6.1.1 .
Due to previous marine pollution events caused by storm events at this location NRW TE recommended that the marina pontoons should not be made from polystyrene materials and enquired as to the material and structure proposed for the new pontoons.	The pontoons used in the new marina will be a proprietary system designed and developed by an established, reputable company and compliant with the requirements of the Yacht Harbour Association Code of Practice for the Design, Construction and Operation of Coastal and Inland Marinas and Yacht Harbours, the established UK design code for marinas and marina infrastructure. Detail is provided in Section 6.1.2 .

Rfl comment	Response
NRW TE noted that Cefas advised sediment samples to be taken from 0m to 2.5m and requested an explanation as to why samples were instead taken from 0m to 1.5m.	The rationale behind the reduced sampling undertaken at the site (i.e. samples were only taken to a maximum of 1.5m depth despite Cefas advice to sample to 2.5m) was that at depths of 1.1m to 1.5m the survey encountered bed rock and could not sample any deeper.

6.1 Water Quality and WFD: Supplementary Information

6.1.1 Mitigation measures assessment

As identified in the WFD assessment, the Proposed Development would construct a new marina and breakwater within a water body which is designated as Heavily Modified for 'navigation, ports and harbours', and 'coast protection use'. Given that the proposed marina and breakwater are not part of a scheme designed specifically for coastal protection, only the measures relating to navigation ports and harbours are considered below. These are presented in **Table 6.1**.

Table 6.1 Summary of measures for navigation ports and harbours (extracted from Cycle 2¹³)

Measure Tier 1	Measure Tier 2	Measure status
Navigation	Modify vessel design	In place
Navigation	Vessel Management	In place
Operations and maintenance	Dredging disposal strategy	In place
Operations and maintenance	Reduce Impact of dredging	In place
Operations and maintenance	Reduce sediment disturbance	In place
Operations and maintenance	Sediment management	In place
Operations and maintenance	Manage disturbance	In place
Working with physical form and function	Modify Channel	In place

Commentary on each of the measures listed in **Table 6.1** supported by the evidence provided within the ES, is provided in **Table 6.2**. The consideration of cumulative impacts with the Holyhead Breakwater, Holyhead Port Expansion and Morlais Tidal Array is also addressed. No other new projects have been identified since the ES was submitted.

Table 6.2 Mitigation measures assessment

Mitigation measure	Commentary	Cumulative commentary
Measures in place		
Modify vessel design	The Proposed Development proposes a new marina within the water body, this will provide safe moorings for recreational vessels already present within the harbour, as well as increasing the availability for additional recreational vessels. Vessels will be managed in the same way as currently, with additional facilities in place as set out in the 'Marina water quality management' section of the ES (Section 26.2.1.3, page 561). As such the Proposed Development will not prevent the implementation of these mitigation measures longer term.	As the Proposed Development will not prevent the implementation of these mitigation measures and introduces measures within the water body aimed at reducing potential impacts from vessels on the water body. Cumulative effects with other identified projects within the water body on these measures are therefore not predicted.
Vessel management		

¹³ <https://www.data.gov.uk/dataset/e88df550-22ee-4572-8ff2-db41a65848a1/wfd-cycle-2-mitigation-measures-assessment-classification>

Mitigation measure	Commentary	Cumulative commentary
Dredging disposal strategy	The Proposed Development requires capital dredging within the footprint of the breakwater. Once construction is completed maintenance dredging will not be required within the marina or its approach. As such the dredging for the Proposed Development, and any resulting sediment plume and deposition, represents a short-term, temporary and one-off activity. As such it will not prevent the implementation of these mitigation measures longer term. With respect to the modification of the channel, no dredging is proposed within current navigation channels therefore no effect on this mitigation measure is predicted.	Cumulative effects between the Proposed Development and the effects of any dredging and construction activities associated with the Holyhead Breakwater, Holyhead Port Expansion and the Morlais Tidal Demonstration Zone on hydromorphology are discussed in Section 26.4.2 of the ES
Reduce impact of dredging		
Reduce sediment resuspension		
Sediment management		
Manage disturbance		
Modify channel		

The mitigation measures analysis provided above in **Table 6.2** supports the conclusions presented in the WFD assessment that the Proposed Development will not prevent the implementation of measures in place.

6.1.2 Pontoons

The pontoons used in the new marina will be a proprietary system designed and developed by an established, reputable company and compliant with the requirements of the Yacht Harbour Association Code of Practice for the Design, Construction and Operation of Coastal and Inland Marinas and Yacht Harbours, the established UK design code for marinas and marina infrastructure.

The predominant form of pontoon from the leading UK manufacturers is a steel or aluminium frame supporting a timber or glass reinforced plastic (GRP) deck, on floats that are either concrete or polyethylene encasing an expanded polystyrene core. The expanded polystyrene is used as a void filler so that if the outer casing is breached the damaged float retains its buoyancy as the polystyrene, even if open to water ingress, will retain around 95% of its dry floatation capacity. This makes the pontoons far safer than if “open” float compartments are used. Pontoon systems using these forms of construction have been used in the majority of locations around the coast of Wales and further afield.

It is recognised that the breakup of the previous marina pontoons allowed large volumes of fragmented expanded polystyrene to escape into the environment; however, this issue arose due to the unusually adverse weather conditions causing the pontoons to break away from their moorings rather than from the presence of the polystyrene itself.

It is considered that the design of the new marina, and the presence of the marina breakwater will provide adequate protection to the new pontoons such that, should a similar storm event occur, the likelihood of the marina breaking up would be no greater than at similar facilities elsewhere in the country.

7 Fish and Shellfish

Rfl comment	Response
NRW TE noted that comments previously have not been addressed and should be reviewed and responded to as appropriate. Clarification was requested on how the potential for a local change to the fish community has been adequately considered within the assessment.	The modelling indicates no significant changes in suspended sediment outside the New Harbour and no significant source of underwater noise is proposed as part of the construction methodology. Habitats within the footprint of the Proposed Development are present throughout the Holyhead Bay area (supporting evidence in ES section 12.6.1). The ES provides evidence that any impacts would be confined to an area of 100m around the footprint of the Proposed Development. As such, potential impacts on fish are considered to be minimal even on a local scale, and the level of detail provided in the ES is considered to be proportionate to the risk. It is likely that measures included in the LEMP for the purpose of biodiversity enhancement would consequently benefit fish and shellfish resources and help to mitigate for any localised displacement of individuals in the New Harbour itself.
NRW TE requested information on the inclusion of short-snouted seahorse (<i>Hippocampus hippocampus</i>) in Table 13.4 of the ES.	This species was reported in the Wylfa trawl surveys undertaken between 2010 and 2014 . An exact location was not provided; however, none of the surveys were undertaken within Holyhead New Harbour and the habitats present in the New Harbour are not suitable for this species (which prefers estuarine / shallow environments with eelgrass). This species is more regularly found along the south coast of the UK and is extremely unlikely to be present within the New Harbour.
NRW TE provided a list of species for inclusion in the assessment and requested further information on the species considered as 'mobile' and 'less mobile'.	Given the limited pathways for effect, it was considered disproportionate to undertake a lengthy assessment in which individual species were considered separately. Instead, the assessment was based on the 'worst case' scenario in terms of receptor group sensitivity. As an example, for the purpose of assessing potential impacts of underwater noise, the assessment assumed the presence of hearing specialist

Project related

Rfl comment	Response
	species. Similarly, when assessing the impact of increased suspended sediment, the assessment assumed the presence of less mobile individuals, such as juvenile and larval fish / shellfish.
NRW TE advised that the operation phase of the Holyhead Port Expansion scheme should be incorporated within the cumulative impact assessment for the Proposed Development.	Principle impact pathways that exist for the Port Expansion scheme relate to underwater noise from piling, habitat loss from reclamation and dredging, and suspended sediment increases from dredging, hence the construction phase is considered to have more potential for cumulative effects than the operational phase. Chapter 24 of the ES concludes that there would be no significant cumulative effect during the construction phase, hence it is highly unlikely that there would be any risk of cumulative effect during the operation phase. The ES for the Port Expansion scheme concluded that operational impacts of that project would have an effect of negligible significance.

Rfl comment	Response
The Royal Yachting Association (RYA) requested that agreement with local sailing clubs and/or other recreational users should be made on the level and positioning of mooring provisions and a schedule of works designed to minimise disruption. Sufficient notification for the works should be provided via a Notice to Mariners which should also cover any requirement for the closure of access points, with information on alternative access points presented. NRW noted that it is likely that the above would be included as a licence condition to be agreed post consent.	Noted. It is accepted that this would form a licence condition.
Clarification was also requested on the level of consideration given to the design and positioning of the slipway as concerns have been raised that proposals for incorporating the slipway into the development may adversely affect the launching and recovery of dinghies, due to impacts of wind from the Proposed Development.	On the basis that the prevailing winds are from the South West, the slipway will predominantly lie in the lea of the existing Trinity Court development. When winds are from other directions, the slipway will either be out of the lea of on-shore structures or, where the new developments lie upwind, they will generally be further away than the existing buildings. Being of a similar scale, these should present no significant additional disruption to winds at the slipway.
The RYA noted that the intended construction phase may coincide with the International Island Games.	The applicant is aware that there will be various events and on-going water activities during the construction phase. Once the construction dates are more closely defined, programming will be discussed with clubs and event organisers to avoid or minimise disruption.

9 Cultural Heritage

Rfl comment	Response
The Royal Commission on the Historic Monuments of Wales (RCHMW) requested that a Written Scheme of Investigation is submitted prior to commencement of Licensed Activities with the following actions outlined: • Implementation of a Protocol for Archaeological Discoveries for the project. • Implementation of a walk-over survey of the foreshore/inter-tidal zone to characterise anthropological features in advance of land reclamation and to identify any currently undocumented archaeological material. • Undertaking an up-to-date marine geophysical survey for the purpose of assessing marine archaeological material. • Undertaking targeted archaeological assessment of archaeological features present in the scheme offshore zone, including any identified during the marine geophysical survey. NRW noted this would likely be included as a licence condition to be agreed post consent.	No further action required – accepted that this would be included as a licence condition.

10 References

Benhemma-Le Gall, A., Graham, I.M., Merchant, N.D. and Thompson, P.M. (2021) Broad-Scale Responses of Harbor Porpoises to Pile-Driving and Vessel Activities During Offshore Windfarm Construction. *Front. Mar. Sci.* 8:664724. doi: 10.3389/fmars.2021.664724

Bonner, D. (2021). Grey Seal Disturbance in Cornwall, England.

Cates, K. and Acevedo-Gutierrez, A. (2017). Harbor Seal (*Phoca vitulina*) Tolerance to Vessels Under Different Levels of Boat Traffic Kelly Cates and Alejandro Acevedo-Gutiérrez *Aquatic Mammals* 2017, 43(2), 193-200, DOI 10.1578/AM.43.2.2017.193

CCW (2009). Pen Llŷn a'r Sarnau /Lleyn Peninsula and the Sarnau Marine European Marine Site: Advice provided by the Countryside Council for Wales in fulfilment of Regulation 33 of the Conservation (Natural Habitats, andC.) Regulations 1994.

Cornwall Wildlife Trust (2021). Marine Strandings in Cornwall and the Isles of Scilly Annual Report 2020. Cornwall Wildlife Trust, Marine Strandings Network Report.

Cornwall Wildlife Trust (2020). Marine Strandings in Cornwall and the Isles of Scilly Annual Report 2019. Cornwall Wildlife Trust, Marine Strandings Network Report.

Cornwall Wildlife Trust (2019). Marine Strandings in Cornwall and the Isles of Scilly Annual Report 2018. Cornwall Wildlife Trust, Marine Strandings Network Report.

Cornwall Wildlife Trust (2018). Marine Strandings in Cornwall and the Isles of Scilly Annual Report 2017. Cornwall Wildlife Trust, Marine Strandings Network Report

Cornwall Wildlife Trust (2017). Marine Strandings in Cornwall and the Isles of Scilly Annual Report 2016. Cornwall Wildlife Trust, Marine Strandings Network Report

Cornwall Wildlife Trust (2016). Marine Strandings in Cornwall and the Isles of Scilly Annual Report 2015. Cornwall Wildlife Trust, Marine Strandings Network Report

CSIP (2011). UK Cetacean Strandings Investigation Programme. Final Report for the period 1st January 2005 –31st December 2010

CSIP (2004) Trends in cetacean strandings around the UK coastline and cetacean and marine turtle post-mortem investigations for the year 2003

CSIP (2005) Trends in cetacean strandings around the UK coastline and cetacean and marine turtle post-mortem investigations for the year 2004

CSIP (2018) UK Cetacean Strandings Investigation Programme Marine Biodiversity Division, Defra. Final Contract Report 1st January 2011 to 31st December 2017.

CSIP (2019). Marine Mammal & Marine Turtle Strandings (Welsh Coast). CSIP/Marine Environmental Monitoring Annual Report 2018.

CSIP (2020). Marine Mammal & Marine Turtle Strandings (Welsh Coast). CSIP/Marine Environmental Monitoring Annual Report 2019.

Feingold, D. and Evans, P.G.H (2014). Bottlenose Dolphin and Harbour Porpoise Monitoring in Cardigan Bay and Pen Llŷn a'r Sarnau Special Areas of Conservation 2011 - 2013. NRW Evidence Report Series Report No: 4, 120 pp, Natural Resources Wales, Bangor.

IAMMWG (2022). Updated abundance estimates for cetacean Management Units in UK waters. JNCC Report No. 680, JNCC Peterborough, ISSN 0963-8091.

JNCC and NRW (2016). Harbour Porpoise (*Phocoena phocoena*) possible Special Area of Conservation: West Wales Marine / Gorllewin Cymru Forol Draft Conservation Objectives and Advice on Activities. January, 2016.

Laist, D.W., Knowlton, A.R., Mead, J.G., Collet, A.S. and Podesta, M. (2001). Collisions between ships and whale'. *Marine Mammal Science* 17 (1) 30-75.

Lusseau, D. (2003). Male and female bottlenose dolphins *Tursiops* spp. have different strategies to avoid interactions with tour boats in Doubtful Sound, New Zealand. *Marine Ecology Progress Series* 257:267-274.

Lusseau, D. (2006). The short-term behavioral reactions of bottlenose dolphins to interactions with boats in Doubtful Sound, New Zealand. *Marine Mammal Science* 22:802-818.

Machernis, A.F., Powell, J.R., Engleby, L. and Spradlin, T.R., 2018. An updated literature review examining the impacts of tourism on marine mammals over the last fifteen years (2000-2015) to inform research and management programs.

Natural England (2019). Seal Necropsies in England. Natural England Commissioned Report NECR263

Nowacek, S.M., Wells, R.S. and Solow, A.R. (2001). Short-term effects of boat traffic on bottlenose dolphins, *Tursiops truncatus*, in Sarasota Bay, Florida. *Marine Mammal Science* 17:673-688.

NRW and JNCC (2017). SAC Selection Assessment Document: West Wales Marine / Gorllewin Cymru Forol. January, 2017. Natural Resources Wales and Joint Nature Conservation Committee, UK. Available from: <http://jncc.defra.gov.uk/page-7343>

Oakley et al 2017. Reactions of harbour porpoise (*Phocoena phocoena*) to vessel traffic in the coastal waters of South West Wales, UK/. *Ocean and Coastal Management* Volume 138, 15 March 2017, Pages 158-169

Pirotta, E., Merchant, N.D., Thompson, P.M., Barton, T. R. and Lusseau, D. (2014). Quantifying the effect of boat disturbance on bottlenose dolphin foraging activity. *Biological Conservation* 181:82-89.

SCOS (2021). Scientific Advice on Matters Related to the Management of Seal Populations: 2021. Available at: <http://www.smru.st-andrews.ac.uk/research-policy/scos/>

Southall, B.L., Bowles, A.E., Ellison, W.T., Finneran, J.J., Gentry, R.L., Greene Jr., C.R., Kastak, D., Ketten, D.R., Miller, J.H., Nachtigall, P.E., Richardson, W.J., Thomas, J.A., and Tyack, P.L.

(2007). Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations. *Aquatic Mammals*, 33 (4), pp. 411-509.

Strong, P. and Morris, S. (2010). Grey seal (*Halichoerus grypus*) disturbance, ecotourism and the Pembrokeshire Marine Code around Ramsey Island. *Journal of Ecotourism* Vol. 9, No. 2, 117 –132

Wisniewska, D. M., Johnson, M., Teilmann, J., Siebert, U., Galatius, A., Dietz, R., *et al.* (2018). High rates of vessel noise disrupt foraging in wild harbour porpoises (*Phocoena phocoena*). *Proc. Biol. Sci.* 285:20172314. doi: 10.1098/ rspb.2017.2314

Appendix A DML2163 Request for Further Information

By email
13 July 2022

Dear Jamie Gardiner,

**REQUEST FOR FURTHER INFORMATION - THE MARINE WORKS (ENVIRONMENTAL
IMPACT ASSESSMENT) REGULATIONS 2007 (AS AMENDED)**

Marine Licence Application DML2163 Holyhead Waterfront Regeneration Scheme

Conygar Holyhead Ltd has applied to Natural Resources Wales (NRW) for a Marine Licence under the Marine and Coastal Access Act 2009 for a development to regenerate the waterfront at Holyhead, Anglesey. NRW Permitting Services (NRW PS) are required to consider such requests in accordance with the Marine Works (Environmental Impact Assessment) (EIA) Regulations 2007 (as amended) ("the Regulations").

Request for further information

In accordance with Regulation 14 of the Regulations, NRW PS considers that further information is required to properly consider, or come to a conclusion on, the likely significant environmental effects of the project. NRW will not proceed with the consideration of the environmental impact or the determination of the marine licence until this information is provided. The consultation responses received during determination have been shared with you and you will note a number of comments which should be addressed and would recommend that you review and look to respond to the comments made. I would particularly draw your attention to the following which you are required to address in order to allow us to proceed with the determination:

1. Coastal and Physical Processes

NRW Technical Experts (NRW TE) require that further clarification on both the volume of sediment to be excavated and the sediment grain size distribution of the sediment being excavated is provided.

Additional clarity is also requested on the contradiction of tidal current flow directions presented within the Figures of Chapter 7 of the ES to ensure confidence within the assessment (please review NRW TE comments within the consultation response for further details on this). Evidence that potential impacts from beach access requirements have been appropriately considered within the assessment is also required and justification in response to the comment raised by NRW TE relating to the use of a silt curtain rather than a cofferdam is also requested.

2. Benthic Ecology

Clarification is required as to whether any maintenance dredging of the new marina and/or development areas will be required during the operational stage of the Project and if so, how has this been incorporated within the assessment of impacts for the operational phase.

Recommendations have been provided by NRW TE within their consultation comments in terms of the biodiversity enhancement measures that could be used for the subtidal habitats and the agreement of the specifications of such enhancement measures with NRW Advisory is likely to be included as a licence condition to be agreed post consent should your application be positively determined.

3. Marine Ornithology

NRW TE have indicated that as the work will be taking place during the bird breeding season, the construction phase of the project has the potential to damage or destroy the nests or eggs. NRW TE also notes that the breeding bird surveys are over three years out of date. Therefore in lieu of updating breeding bird surveys, NRW TE have advised a check for nesting birds is undertaken before construction takes place and suitable buffers are put in place around any active nests to ensure no bird nests or eggs are damaged or destroyed during construction and this is likely to be a condition of consent should your application be positively determined.

4. Marine Mammals

NRW TE do not recommend the use of Temporary Threshold Shifts (TTS) onset as a proxy for disturbance and have presented a number of indicative fixed noise thresholds which you should review and use as the most appropriate with sufficient justification for the method chosen. Impact conclusions should then be revisited and any changes to the assessments and their conclusions provided.

Additionally, a review of the collision impact assessment is also recommended to ensure it is proportional and clarification on the approach is requested along with the inclusion of the potential for disturbance pathways from recreational craft. Further mitigation measures in the form of adherence to codes of conduct, which reduce collision risk have been suggested within NRW TE's comments and should be reviewed and considered accordingly.

NRW TE recommend the use of Marine Mammal Management Units (MMMUs) when determining Adverse Effect on Site Integrity for marine mammal site features in Wales. This should be reviewed, along with the above comments relating to use of TTS and the potential for physical disturbance from recreational vessel activity and the conclusions of the shadow HRA updated as necessary.

5. Water Quality and WFD

Clarification is required on the conflicting statements between Tables 26.3 and 26.4 relating to the percentage of lower sensitivity habitats and the scoping in and/or out of this impact. As above, clarification is also requested on the maintenance dredge requirements for the operational phase of the Project and how this has been considered within the assessment. Confirmation that the land reclamation associated with Newry Beach has been included within the assessment (or rationale for omission) is also sought as is the assessment of risk of land based spills entering the watercourse.

NRW TE require evidence to show how the scheme interacts with the mitigation measures associated with the water body's 'heavily modified' status has been adequately considered within the assessment, including cumulatively.

Due to previous marine pollution events caused by storm events at this location NRW TE have recommended that the marina pontoons should not be made from polystyrene materials and have enquired as to the material and structure proposed for the new pontoons.

6. Fish and Shellfish

Several comments previously raised during pre-application advice and/or scoping opinion have not been addressed. These should be reviewed (within NRW TE's comments) and responded to as appropriate. We also require clarification on how the potential for a local change to the fish community has been adequately considered within the assessment.

7. Navigation

The Royal Yachting Association (RYA) have requested that agreement with local sailing clubs and/or other recreational users should be made on; the level and positioning of mooring provisions and a schedule of works designed to minimise disruption and/or interference to harbour users. Sufficient notification for the works should be provided via a Notice to Mariners which should also cover any requirement for the closure of access points, with information on alternative access points presented.

It is likely that the above would be included as a licence condition to be agreed post consent should your application be positively determined.

Clarification is also required on the level of consideration given to the design and positioning of the slipway as concerns have been raised that proposals for incorporating the slipway into the development may adversely affect the launching and recovery of dinghies, due to impacts of wind from the proposed shoreside development.

Additionally, the RYA have noted that the intended construction phase will coincide with the International Island Games in 2025 and hopes that the works will not disrupt or prevent the water-based events of these Games.

8. Cultural Heritage

The Royal Commission on the Historic Monuments of Wales (RCHMW) have requested that a Written Scheme of Investigation (WSI) is submitted to the Licensing Authority for approval prior to commencement of Licensed Activities with the following actions outlined within the agreed WSI:

- Implementation of a Protocol for Archaeological Discoveries for the project.
- Implementation of a walk-over survey of the foreshore/inter-tidal zone to characterise anthropological features in advance of land reclamation and to identify any currently undocumented archaeological material.
- Undertaking an up-to-date marine geophysical survey for the purpose of assessing marine archaeological material.
- Undertaking targeted archaeological assessment of archaeological features present in the scheme offshore zone, including any identified during the marine geophysical survey.

This would be included as a licence condition to be agreed post consent should your application be positively determined.

Please provide the information requested above by **03 August 2022**. If NRW has not received this information by this date, application DML2163 will be treated as having been withdrawn. Please contact me as soon as possible if additional time will be required to collate this information.

Please note should we determine that information provided is considered further information there will be a requirement to publicise this in accordance with the requirements stipulated in Regulation 16 of the Regulations. This will be reviewed once the response is received. If this is the case you will be provided with a public notice to publish in the same newspaper as the project was previously publicised at your own expense. If you have any concerns about being able to provide this information on time then please do contact me as soon as possible.

Yours sincerely

Seran Davies

Marine Licensing Team
Natural Resources Wales

