

ENVIRONMENTAL SCOPING REPORT

Holyhead Marina Re-Build Project



Holyhead Marina Rebuild
Project

Environmental Scoping Report
F01
31 October 2019

REPORT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
D01	EIA Scoping Report	Daniel Hogan	Ruth Barr	Grace Glasgow	10/10/2019
F01	EIA Scoping Report	Daniel Hogan	Ruth Barr	Grace Glasgow	31/10/2019

Approval for issue

Grace Glasgow

31 October 2019

© Copyright RPS Group Plc. All rights reserved.

The report has been prepared for the exclusive use of our client and unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS'), no other party may use, make use of, or rely on the contents of this report. The report has been compiled using the resources agreed with the client and in accordance with the scope of work agreed with the client. No liability is accepted by RPS for any use of this report, other than the purpose for which it was prepared. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

RPS accepts no responsibility for any documents or information supplied to RPS by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made. RPS has used reasonable skill, care and diligence in compiling this report and no warranty is provided as to the report's accuracy. No part of this report may be copied or reproduced, by any means, without the prior written consent of RPS.

Prepared by:

Prepared for:

RPS

Daniel Hogan BSc MSc CSci C.WEM MCIWEM
Associate - Water Environment and Flood Risk Management

Elmwood House
74 Boucher Road, Belfast
Co. Antrim BT12 6RZ

T +44 2890 667 914

E daniel.hogan@rpsgroup.com

Holyhead Marina Ltd

Geoff Garrod
Director

Newry Beach,
Holyhead. Anglesey.
North Wales LL65 1YA

T +44 1407 760 111

E Geoff.Garrod@holyheadmarina.co.uk

Contents

1	INTRODUCTION	5
1.1	Context	5

REPORT

1.2	The Applicant	5
1.3	Objectives of this document	6
1.4	Structure of the Scoping Report	6
2	PROJECT DESCRIPTION	8
2.1	Background	8
2.1.1	Site Location	8
2.1.2	Marina Layout (Pre-March 2018 - Storm Emma)	9
2.1.3	Storm Emma	9
2.1.4	Need for the Marina Rebuild Project	12
2.2	Preliminary Design Option for Marina Rebuild	12
2.2.1	Wave Climate Simulations	12
2.2.2	Design Recommendations	13
2.2.3	Rubble Mound Breakwater	13
2.3	Proposed Marina Rebuild Project	14
3	LEGISLATIVE AND CONSENTING REQUIREMENTS	19
3.1	Introduction	19
3.2	Consents & Licences	19
3.2.1	Harbours Act 1964 (as amended)	19
3.2.2	The EIA Directive	19
3.2.3	The Marine and Coastal Access Act 2009	20
3.2.4	Town and Country Planning Act 1990	20
3.2.5	The Conservation of Species and Habitats Regulations 2010 (as amended)	21
3.2.6	Wildlife and Countryside Act 1981 (as amended)	21
3.3	Marine Planning Policy	22
3.3.1	Marine Policy Statement	22
4	CONSULTATIONS	23
5	EXISTING ENVIRONMENT	29
5.1	Biodiversity	29
5.1.1	Baseline Conditions	29
5.1.2	Potential Environmental Effects	34
5.1.3	Proposed approach to the EIAR	35
5.1.4	Preliminary Mitigation Measures	35
5.1.5	Summary of Scoping Exercise	36
5.2	Geology, Hydrogeology & Hydrology	36
5.2.1	Baseline Conditions	36
5.2.2	Potential Environmental Effects	39
5.2.3	Proposed approach to the EIAR	39
5.2.4	Preliminary Mitigation Measures	40
5.2.5	Summary of Scoping Exercise	40
5.3	Water Quality	40
5.3.1	Baseline Conditions	40
5.3.2	Potential Environmental Effects	41
5.3.3	Proposed approach to the EIAR	41
5.3.4	Preliminary Mitigation Measures	42
5.3.5	Summary of Scoping Exercise	42
5.4	Flood Risk Assessment	42
5.4.1	Baseline Conditions	42
5.4.2	Potential Environmental Effects	44
5.4.3	Proposed approach to the EIAR	44
5.4.4	Preliminary Mitigation Measures	44
5.4.5	Summary of Scoping Exercise	44
5.5	Air Quality & Climate Change	44
5.5.1	Baseline Conditions	44

5.5.2	Potential Environmental Effects.....	45
5.5.3	Proposed approach to the EIAR	45
5.5.4	Preliminary Mitigation Measures.....	46
5.5.5	Summary of Scoping Exercise.....	46
5.6	Noise & Vibration	47
5.6.1	Baseline Conditions	47
5.6.2	Potential Environmental Effects.....	47
5.6.3	Proposed approach to the EIAR	47
5.6.4	Preliminary Mitigation Measures.....	47
5.6.5	Summary of Scoping Exercise.....	48
5.7	Material Assets – Coastal Processes	48
5.7.1	Baseline Conditions	48
5.7.2	Potential Environmental Effects.....	49
5.7.3	Proposed approach to the EIAR	49
5.7.4	Preliminary Mitigation Measures.....	50
5.7.5	Summary of Scoping Exercise.....	50
5.8	Material Assets – Traffic & Transportation.....	50
5.8.1	Baseline Conditions	50
5.8.2	Potential Environmental Effects.....	50
5.8.3	Preliminary Mitigation Measures.....	51
5.8.4	Summary of Scoping Exercise.....	51
5.9	Archaeology & Cultural Heritage.....	51
5.9.1	Baseline Conditions	51
5.9.2	Potential Environmental Effects.....	59
5.9.3	Proposed approach to the EIAR	59
5.9.4	Preliminary Mitigation Measures.....	59
5.9.5	Summary of Scoping Exercise.....	59
5.10	Landscape & Visual	59
5.10.1	Baseline Conditions	59
5.10.2	Potential Environmental Effects.....	60
5.10.3	Proposed approach to the EIAR	61
5.10.4	Preliminary Mitigation Measures.....	61
5.10.5	Summary of Scoping Exercise.....	61
5.11	Waste	61
5.11.1	Baseline Conditions	61
5.11.2	Potential Environmental Effects.....	64
5.11.3	Proposed approach to the EIAR	64
5.11.4	Preliminary Mitigation Measures.....	65
5.11.5	Summary of Scoping Exercise.....	65
5.12	Population, Human Health & Socio Economics	65
5.12.1	Baseline Conditions	65
5.12.2	Potential Environmental Effects.....	68
5.12.3	Proposed approach to the EIAR	69
5.12.4	Preliminary Mitigation Measures.....	69
5.12.5	Summary of Scoping Exercise.....	69
5.13	Major Disasters & Accidents	69
5.13.1	Baseline Conditions	69
5.13.2	Potential Environmental Effects.....	70
5.13.3	Proposed approach to the EIAR	70
5.13.4	Preliminary Mitigation Measures.....	70
5.13.5	Summary of Scoping Exercise.....	71
5.14	Cumulative Effects & Environmental Interactions	71
5.14.1	Context.....	71
5.14.2	Baseline Conditions	71
5.14.3	Proposed approach to the EIAR	73

5.14.4 Preliminary Mitigation Measures.....	74
6 SUMMARY & CONCLUSIONS.....	75
7 REFERENCES AND BIBLIOGRAPHY	77

Tables

Table 4-1 Summary of consultations with stakeholders/government departments.....	23
Table 5-1 Summary of listed buildings in close proximity to the Holyhead Marina Development.....	52
Table 5-2 Age Distribution Statistics (Census 2011)	65
Table 5-3 General Health Statistics for Holyhead Town (2011 Census).....	66
Table 5-4 Holyhead Employment Statistics (Census 2011)	67
Table 5-5 Highest level of qualification (Census 2011)	67
Table 5-6 Employment Sectors (Census 2011)	68
Table 5-7 Existing and/or approved project in vicinity of Holyhead Marina.....	72
Table 6-1 Summary of EIA Scoping.....	75

Figures

Figure 2-1 Site Location.....	8
Figure 2-2 Holyhead Marina Layout (Pre-March 2018 Storms)	9
Figure 2-3 Typical Cross Section of Rubble Mound Breakwater.....	14
Figure 2-4 Proposed Marina Layout	18
Figure 5-1 Special Areas of Conservation (SAC)	30
Figure 5-2 Special Protection Areas (SPA)	31
Figure 5-3 Special Sites of Scientific Interest (SSSI)	32
Figure 5-4 Geological Formations	37
Figure 5-5 Designated Sites of Geological Importance.....	38
Figure 5-6 Rivers discharging into Holyhead Marina	39
Figure 5-7 Coastal and Surface Waterbodies (NRW)	41
Figure 5-8 NRW Flood Map (Zones 2 & 3).....	43
Figure 5-9 Holyhead Lease Area (Admiralty Chart)	48
Figure 5-10 Listed Buildings located in close proximity to the Holyhead Marina Development.....	52
Figure 5-11 Designated Conservation Areas	58
Figure 5-12 Maritime Heritage Assets (Wrecks).....	58
Figure 5-13 Designated Areas of Outstanding Natural Beauty	60

Appendices

Appendix A Holyhead Marina Pre-Application Advise (September 2019)	79
Appendix B Didemnum vexillum: survey of distribution and extent in Holyhead Harbour after storm Emma, October 2018.....	80
Appendix C – Responses from Pre-Consultations	81
Appendix D - Assessment of Wave Climate during Storm Emma (RPS 2018).....	82
Appendix E – Listed Buildings	83

1 INTRODUCTION

1.1 Context

This Environmental Impact Assessment (EIA) Scoping Report (EIAR) has been prepared by RPS on behalf of Holyhead Marina Ltd for the Holyhead Marina Rebuild Project for which development consent is sought.

This EIA Scoping Report has been prepared in accordance with the European Commission's Guidance on the Environmental Impact Assessment of Projects (EU Commission 2017) and the Natural Resources Wales Guidance Note 13: Scoping and Environmental Impact Assessment for Marine Developments (NRW 2017).

Holyhead Marina Ltd intend to apply to the Welsh Ministers via the planning inspectorate for a Harbour Revision Order (HRO) under Section 14 of the Harbours Act 1964 (as amended) to authorise construction of the Holyhead Marina Rebuild Project. As the proposed HRO would authorise a 'project', Holyhead Marina Ltd must also submit 'notice of their intention to make the application' to the Welsh Ministers under the requirements of Paragraph 3, Schedule 3 of the Harbours Act 1964. This will also allow the Welsh Ministers to 'screen' the notice for the purposes of Environmental Impact Assessment (i.e. provide an EIAR Screening Opinion).

A Marine Licence granted under the requirements of Part 4 of the Marine and Coastal Access Act 2009 (as amended) will also be required to construct the marine facilities. Therefore Holyhead Marina Ltd must also request an EIAR Screening Opinion from Natural Resources Wales (NRW) under the requirements of the Marine Works (EIA) Regulations 2007 (as amended).

This EIAR Scoping Report will provide the Competent Authorities (Planning Inspectorate) and Natural Resources Wales) with information on specific characteristics of the Holyhead Marina Rebuild project in order to enable them to provide a Scoping Opinion.

1.2 The Applicant

Holyhead Marina Ltd was established in 1995 and commenced trading in tandem with the established boatyard business Trinity Marine Ltd as a general boatyard on land previously owned by Trinity House as a buoy maintenance depot and lighthouse control centre. During that time the feasibility of constructing a marina in the western sector of Holyhead Harbour was assessed. The feasibility study was commissioned by the County Council's Economic Development Department (Wallace Evans Feasibility Report) in the mid 1990's. This study concluded that a marina protected by floating breakwaters was feasible and made suggestions for various sites within the outer harbour mainly in the western sector where Holyhead Marina was eventually built. Wind and wave data that was available at the time of this study confirmed viability and informed the detailed design of the marina by the appointed consultants.

Holyhead Marina Ltd negotiated a 35 year seabed lease with Stena Line Ports Ltd and commenced construction in 2000. The marina grew steadily over a number of years finally reaching a capacity of some 350 berths offering tidally unrestricted visitor and contract berthing. The leased area of seabed was originally owned by Stena Line Ports Ltd is now owned by Conygar (Holyhead) Ltd.

Holyhead Marina was a Blue Flag marina complying with the various codes of practice and guidance notes published by the British Marine Federation, The Environment Agency and the Royal Yachting Association. The Blue Flag is given to marinas that meet a specific set of criteria concerning environmental information and education, water quality, safety, services and environmental management.

As a pre-existing berthing facility, Holyhead Marina uses, as its base line for its standards, the Code of Practice for the design, construction and operation of coastal and inland marinas and yacht harbours published by the Yacht Harbour Association and the British Marine Federation. Holyhead Marina has a successful track record and an excellent reputation in this field. Environmental practices are embedded in the culture of the organisation and its facilities which include guidance under the Green Blue initiative. The Green Blue is the environmental awareness initiative set up by the Royal Yachting Association and British Marine to promote the sustainable use of coastal and inland waters by boating and water sports participants, as well as the sustainable operation and development of the recreational boating industry. Investment in boat handling equipment and planning for imminent possible legislation with regard to wash down facilities and the like are on-going. Recommended good practices with regard to sea toilet discharges, holding tanks and pump out facilities are already at the forefront of Holyhead Marina's business plan

1.3 Objectives of this document

The specific objectives of this report are to:

- Define and describe the study area (i.e. physical, biological, human and built environment) and the proposed scheme.
- Identify potential significant effects on the environment for detailed examination and those that can be scoped out of future assessments.
- Define other projects and plans that may need to be considered as part of an assessment of cumulative impacts.
- Identify where data gaps exist and what further data collection is considered necessary to inform the impact assessment (i.e. field surveys or modelling).

1.4 Structure of the Scoping Report

This EIAR Scoping Report is broken down in the following Chapters.

- Introduction
- Project Description
- Legislative & Consenting Requirements
- Consultation

REPORT

- Existing Environment
- Cumulative Effects and Environmental Interactions
- Summary and Conclusion
- Reference & Bibliography
- Appendices

2 PROJECT DESCRIPTION

This chapter of the Scoping Study sets out a description of the proposed development and contains information on the project site, preliminary design, size and other relevant features in order to establish the characteristics of the project for the purposes of environmental assessment.

2.1 Background

2.1.1 Site Location

Holyhead is the largest town on the Isle of Anglesey and is known for being a busy ferry port. Holyhead is known for its ferry traffic with both Stena Line and Irish Ferries operating the principal passenger and freight links to and from Dublin, Ireland. There are some 8,000 ferry movements annually and some 500 other movements including bulk carriers, cruise liners, coasters and other large fishing vessels. There is also a local fishing fleet and a steady flow of work boats, lifeboats, survey vessels and windfarm support vessels. The Statutory Harbour Authority is Stena Line Ports Ltd who own and manage the Port.

As illustrated in Figure 2-1, the Holyhead Marina lies in the south west corner of Holyhead harbour on the eastern side of the Great Breakwater. The Marina at Holyhead is centrally placed for all passengers throughout the Irish Sea. It is a safe haven with 24 hour access possible in all weathers and at all states of the tide.

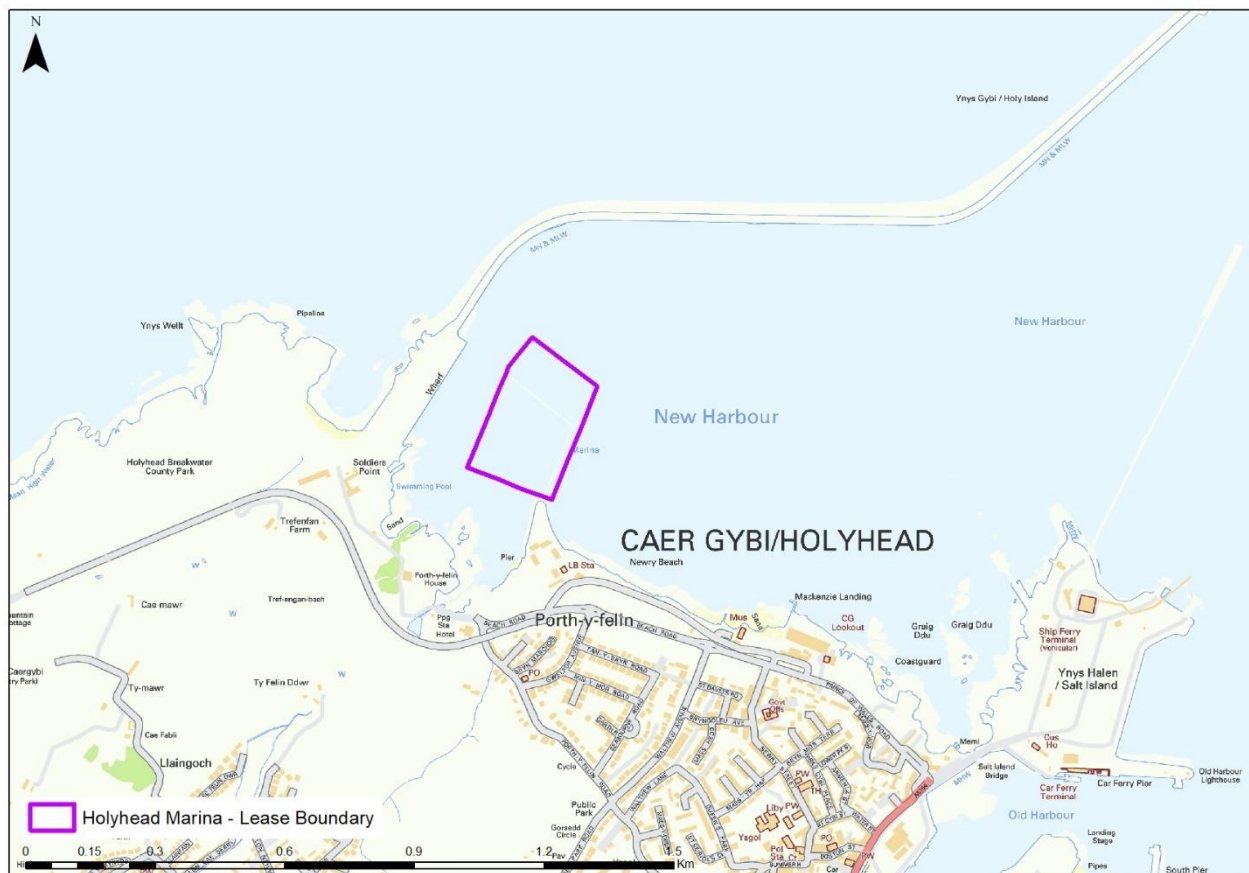


Figure 2-1 Site Location

2.1.2 Marina Layout (Pre-March 2018 - Storm Emma)

Up until March 2018, Holyhead Marina had 350 fully serviced berths as illustrated in Figure 2-2. The marina was protected against the north easterly fetch of 5.5km using 70 tonne floating reinforced concrete breakwater pontoons. Although the marina was vulnerable to north easterly storms it operated successfully for 17 years with very little damage to vessels or pontoons. In March 2018, Storm Emma (Beast from the East) generated an unprecedented weather system causing an un-survivable sea state that lead to the breakdown of the entire marina. The pontoon berths in the marina were protected from incoming waves by 4m wide floating breakwaters on the eastern and northern site of the marina area. The breakwaters were moored by a series of nylon cables anchored to the seabed.

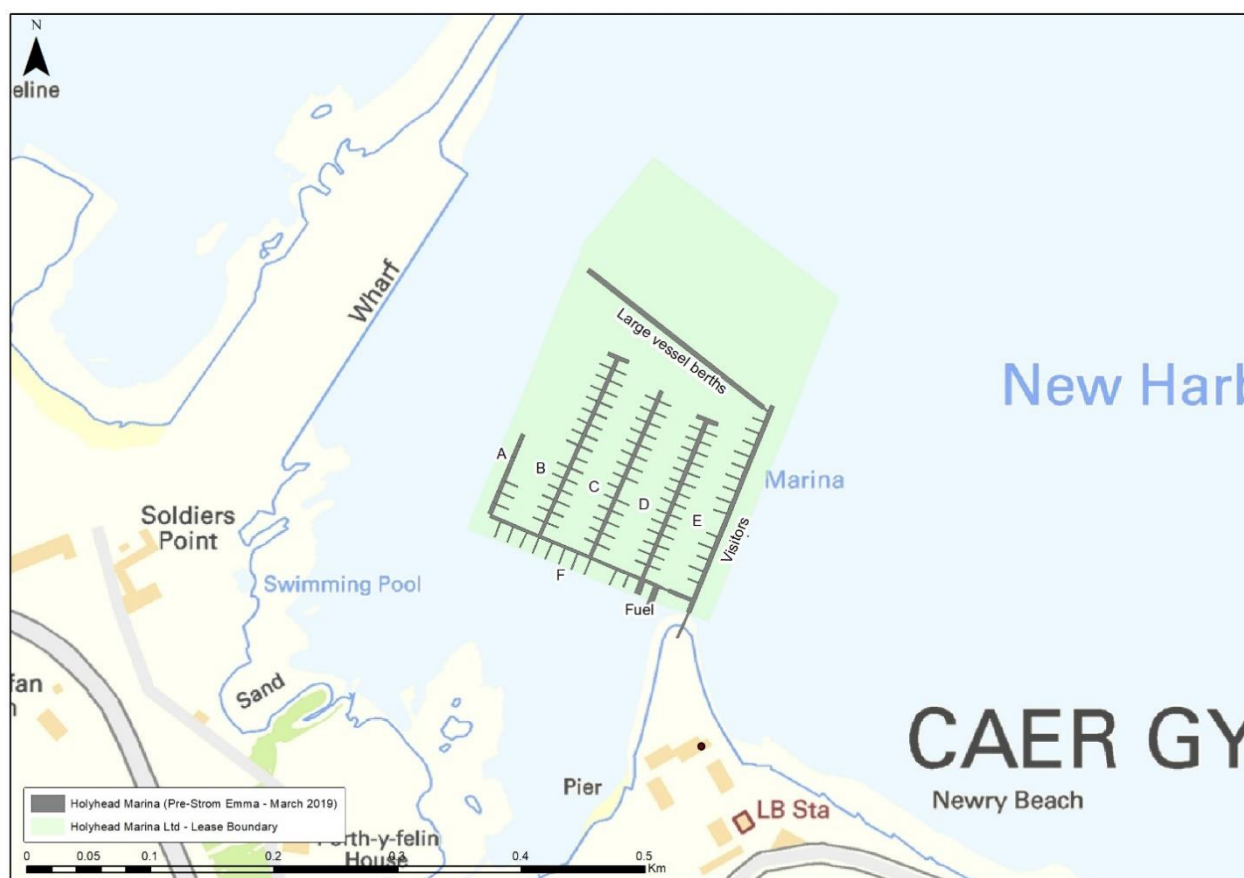


Figure 2-2 Holyhead Marina Layout (Pre-March 2018 Storms)

2.1.3 Storm Emma

Storm Emma hit Holyhead on 2nd March 2018. The high winds and waves resulted in the complete destruction of Holyhead marina and the loss of 80 vessels. As shown in the plates below, the destruction of the walkway piers also lead to the release of large amounts of polystyrene from marina floats being washed ashore around Soldiers Point headland. The Storm also caused damage to the inner face of the great breakwater and undermined the promenade sea wall.





2.1.4 Need for the Marina Rebuilt Project

Holyhead is a strategically important port town and an important link to Dublin on the East Coast of Ireland. It is well connected by road and rail to the major population centres in GB and offers the only truly tidally unrestricted deep water facility in the region. Holyhead Marina was an important link in the chain of marinas around the Welsh Coast as it offered a safe haven for vessels on passage at any state of the tide without locks or sills. The marina employed 12 marina and boatyard staff and operated a 24 hour facility seven days a week.

Before Storm Emma, the marina proved itself to be an economic catalyst for the local economy responsible for direct cash injections into local businesses i.e. visitors on passage in the Irish Sea demand berthing, boatyard facilities, chandlery, fuel, water, power and provisions. The satellite businesses around the marina account for approximately 30 - 40 jobs in the locality.

Since its destruction in March 2018, the economic loss to the locality has been felt by the local community. Although the County of Anglesey and the Welsh Government have allocated funds to assist with the clean-up and compensate local businesses for the loss of their customer base in addition to assistance with rates relief it is not sustainable in the long term.

In addition to the local employment there is a clear and increasing demand for commercial berthing that can be facilitated by Holyhead Marina. Over the last decade, there has been a notable increase in demand for commercial berthing particularly from windfarm support craft, military vessels, survey vessels and lifeboats. The demand for commercial vessel berthing has come from the highly successful local employer (the Holyhead Group) comprising of Turbine Transfers, Holyhead Towing and Holyhead Marine Services located adjacent to Holyhead Marina. There is also an emerging tidal energy market and a re-emerging wind turbine market in this sector of the Irish Sea. Berthing for support vessels will undoubtedly increase.

There is also an increasing demand from the south coast yachting fraternity requiring 24 hour accessible facilities and good transport links to compensate for the oversubscribed south coast marina offer.

2.2 Preliminary Design Option for Marina Rebuild

Holyhead Marina Ltd commissioned RPS to undertake a study of the storm wave conditions approaching the marina site during Storm Emma (2018). The study included an assessment of Storm Emma and the likelihood of reoccurrence. The report included recommendations of possible design options suitable to withstand future extreme events. The full report has been included in Appendix D of this report.

2.2.1 Wave Climate Simulations

RPS used a suite of coastal process models, based on the MIKE software developed by DHI to assess the effects of Storm Emma on the coastal processes within Holyhead Port. The MIKE 21 & MIKE 3 systems are state of the art, industry standard, modelling systems based on a flexible mesh approach. This software was developed for applications within oceanographic, coastal and estuarine environments and has been approved by numerous leading institutions and authorities including the US Federal Emergency Management Agency (FEMA).

REPORT

The wave climate predicted to have occurred during Storm Emma has the following parameters:

- Significant wave height H_{m0} 1.57 metres
- Maximum wave height H_{max} 3.05 metres
- Spectral Peak wave period T_p 3.86 seconds
- Mean Energy wave period T_{m10} 3.50 seconds
- Wave length 24 metres

Based on the RPS assessment it will be seen that the wave climate predicted to have occurred at the marina site during storm Emma is extremely severe for what would have been considered to be a sheltered site. An assessment of historical data has indicated that the conditions experienced during Storm Emma would have had a return period approximating to a 1 in 75 year event.

2.2.2 Design Recommendations

It has been recognised that global warming and climate change have altered the frequency of severe events. The effects of climate change are likely to cause an increase in extreme events reoccurring in the future. As shown by the devastation caused, the conditions prevalent during Storm Emma were too severe for the safe use of floating breakwaters as the primary protection. The RPS study has suggested that the marina is protected by a breakwater structure (A Rubble Mound Breakwater).

RPS examined the design conditions which would be required for a marina at the site of the existing marina at Holyhead. Based on historical data these conditions would have had a return period approximating to 1 in 200 years. The recommended wind and wave data for a redesigned marina should be at least as follows:

- 3 second gust speed 48m/s
- 30 second gust speed 38 m/s
- Significant wave height 1.80 metres
- Maximum wave height 3.50m
- Spectral Peak wave period 4.2 seconds
- Mean energy wave period 3.8 seconds

2.2.3 Rubble Mound Breakwater

Rubble mound breakwaters are structures built of quarried rock, usually protected by a cover layer of heavy armour stones or concrete armour units. The core of the breakwater may partly comprise other materials (e.g.

gravel). Breakwaters generally serve the purpose of providing quiet water for anchorage or mooring of vessels, protecting them from attack by waves and or currents.

A typical cross section of a rubble mound breakwater is shown in Figure 2-3, which indicates the various components. Various options are available depending mainly on the function of the breakwater, access, use of the lee side, crest elevation requirements and also cost considerations or repair requirements.

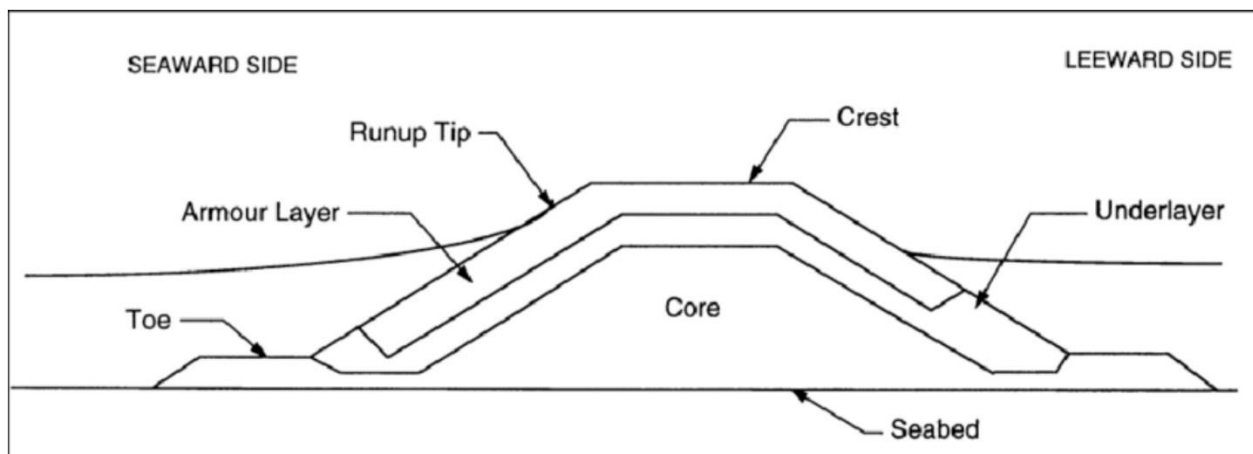


Figure 2-3 Typical Cross Section of Rubble Mound Breakwater

The main body comprises the core, usually built of wide-graded blasted material such as quarry run, one or more under or filter layers, and the cover or armour layer. The crest may be protected by the armour layer, but frequently incorporates a concrete crest element or crown wall, often with a roadway. The toe and scour protection at the seaward face of the breakwater, when built on sandy bed material, is needed to maintain stability of the slope in case of erosion of the seabed. Depending on the type of subsoil, the breakwater may be built directly on the sea bed or on special filters, made of quarried rock and/or a geotextile. In the case of very poor foundation conditions, soil improvement or other measures may be needed to achieve geotechnical stability of the structure.

2.3 Proposed Marina Rebuild Project

The marina has a defined lease area based on the original negotiations with Stena Line Ports Ltd and their agents Edmund Kirby of Liverpool. There was also a defined fairway and an anchor zone to accommodate the lateral tethers securing the marina. This seabed lease area is defined by GPS and OS map coordinates and occupies some 6.5 Hectares (65,000m²) in the western sector of Holyhead Harbour (Figure 2-2).

The Marina Rebuild Project will follow a similar layout to the original design as illustrated in Figure 2-2. This will comprise of four piers A, B, C and D linked by the southernmost pier E. These piers but will be protected by a solid rubble mound breakwater (As illustrated in Figure 2-3).

The basic berthing unit is expected to be the 9 metre finger berth cantilevered from the walkway piers at approximately 9 metre centres. There will be a number of 10.5 metre berthing fingers and possibly 12 metre finger berths distributed around the marina to cater for the larger vessels. There will also be some small vessel

REPORT

finger berths (7metre) to cater for the growing demand for RIBS and smaller motor boats. The walkways will be proprietary GRC planked units, 2.5 metres wide tethered most likely using the Seaflex system.

Pier A, the westernmost walkway, will be a floating breakwater running roughly parallel to Soldiers Quay. This pier will provide protection from any reflected wave off the vertical quay wall at high tide. This reflected component is likely to be radically reduced by the additional protection provided by the rubble breakwater. It is anticipated that this pier will become the visitor and commercial vessel berth with its own bridgehead from the roundhead at the end of the new rubble breakwater. The pier will be made of new and salvaged 70 tonne 4 metre wide floating breakwaters tethered with the TTI chain/rope/chain system or the Seaflex system. The pier will be some 7 units long (140 metres) and will also act as primary containment should future storms cause damage within the marina area thus preventing marina floats from escaping.

The entrance to the marina will be a break in pier A on the western side marked with navigation lights (2 fixed vertical reds) subject to Trinity House and Harbour Authority specification. Beyond the entrance Pier A will continue in 4 metre wide breakwater units for large vessel berthing until it connects to Pier E, the southernmost walkway.

Pier E is anticipated to be a 3 metre wide continuous float reinforced concrete walkway linking with piers B, C and D. This pier is likely to be made from reinforced concrete 3 metre wide x 20 metre long breakwater units to complete the necessary containment should future storms cause breakdown of the marina structure.

Rubble Mound Breakwater

The footprint of the rubble mound breakwater is designed to be completely within the existing defined lease area extending the existing access spit by some 500 metres to enclose and protect the new marina from east/north east weather systems. The proposed rubble mound breakwater will permanently occupy approximately 1.15 Hectares (11,500m²) of seabed. The proposed rubble mound breakwater also takes account of the reflected wave from the vertical walls of Soldiers Quay and the root of the main breakwater and maintains the required distance from Soldiers Quay (105 metres) to allow its continued use as a commercial quay.

The detailed construction methodology has yet to be established through detailed design. At this early stage it is thought that the most economical method of construction will be by end tipping suitable core material (quarried stone) arriving by tipper trucks and trimming/shaping using long reach excavators. Geotextile membranes will be installed to contain the fines and the entire structure will be armoured with a secondary layer and a primary layer of rock armour stone. The seaward face is likely to require rock armour units weighing some 200kg (W50=200kg). The inner revetment is likely to require a primary armour in the region of 110kg (W50=110kg). The roundhead (and bends) seaward primary layers are likely to require a primary layer comprising of 520kg units (W50=520kg).

Based on an average depth below Chart Datum of approx. 4.5 metres and a top level to safely cope with surge tides of about 5.0 AOD the total core volume required will be in the order of 116,000 cubic metres of controlled fill faced with some 40,000 cubic metres of primary and secondary rock armour.

REPORT

There will be a flexible pavement topping to the roadway which is anticipated to be single carriageway with passing bays and viewing points at the bends. The roundhead will be designed to allow emergency vehicles and maintenance plant to turn around adjacent to the second bridge head. There will also be navigation lights marking the roundhead in accordance with the Harbour Authority and Trinity House requirements.

During the operational phase there will be occasional maintenance, re-surfacing and remedial work following extreme storm events.

Bridgehead, Access and Security

Access to the main berthing facility for berth holders will be via a new gangway from the root of the rubble mound breakwater leading directly onto pier E. There will be a new bank seating and security gates for berth holders. Electrical distribution cabinets, water main stop taps, wifi aerials and signage will be positioned at the top of the gangway. Services and fuel feeds will run in cable troughs below the gangway.

Fuel Pontoon

There will be a fuel pontoon on Pier E fed from the existing 15000 litre double skinned tank located in the refuse compound in the berth holders' car park. Distribution will comply with the latest regulations. Air pressure will be monitored and all pipework within Pier E will be double skinned. The precise location of the fuel pontoon has yet to be established but it is likely to be at the western end of pier E where it joins pier A so larger commercial vessels can easily come alongside.

RNLI Afloat Lifeboat

It is hoped that the RNLI will continue to work with Holyhead Marina to find a suitable design for a permanent facility for the RNLI afloat lifeboat. Current policy requires the provision of freehold or long leasehold berthing facilities independent from the rest of the marina so that the lifeboat can operate privately and separately from the rest of the berthing facility. This may require a separate gangway onto a rising/falling lifeboat pen.

Mooring Tethering System

The tethering system is likely to be a proprietary system such as Seaflex (Seaflex AB, Sweden) which stretches and returns with the tidal range and holds the pontoons on station laterally with minimal disturbance of the seabed using sustainable materials and well established technology. The Seaflex tethers are likely to be anchored by concrete clump anchor blocks placed on the seabed. The floating breakwater element (pier A) will probably re-use the TTI combination chain/rope/chain system with 10 tonne clump anchors which proved to be effective even during the extremes of Storm Emma.

It is worth noting that some traditional mooring tethers can damage the underwater flora and fauna by allowing chain to scour the seabed creating dead spots with no vegetation. The Seaflex system avoids scouring of the seabed because it is constantly under tension. In addition the materials do not release any pollutants and can be fully recycled. The moorings are made from the highest quality stainless steel or titanium offering the best protection against corrosion.

Shore side Infrastructure

Holyhead Marina already has its established shore-side infrastructure based on the original proposals for a 500 berth facility. Standards for sanitary facilities, car parking, and waste management comply with current recommendations issued by the Yacht Harbour Association.

Boatyard services are already in place. In 2019, the boatyard invested in a new 25 tonne slipway straddle hoist which is now in full operation. This equipment is variable width and can handle much beamier vessels than before.

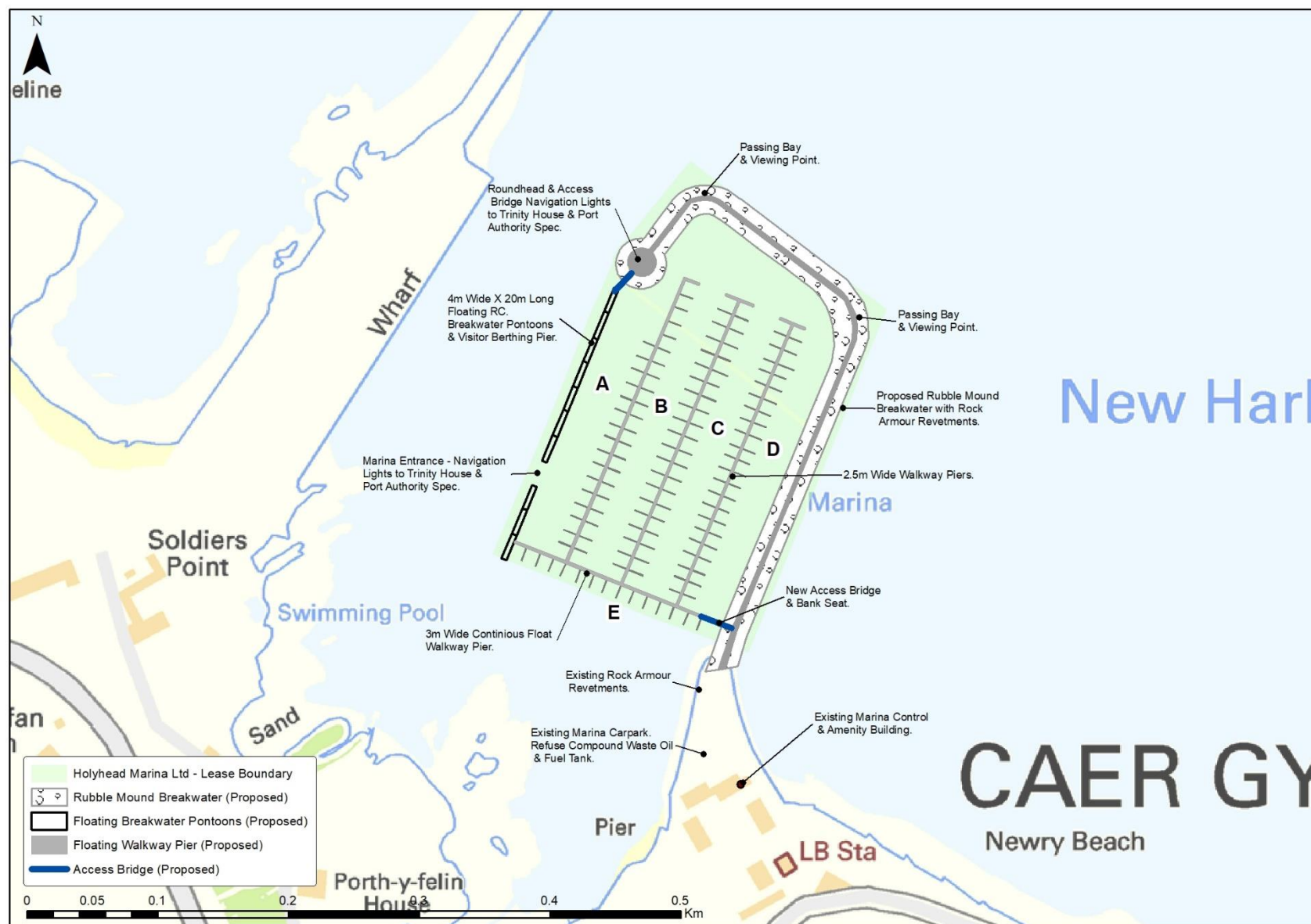


Figure 2-4 Proposed Marina Layout

3 LEGISLATIVE AND CONSENTING REQUIREMENTS

3.1 Introduction

The proposed scheme will require a range of consents and licences under different legislative acts, supported by detailed technical and environmental assessments. The principal consents and licences required are summarised below. These consents all invoke a wide range of related environmental legislation with which the proposed scheme will need to comply, the relevant legislative framework is also outlined below.

3.2 Consents & Licences

3.2.1 Harbours Act 1964 (as amended)

Under the requirements of the Harbour Act 1964 as amended by the Harbours Act 1964 (Delegation of Functions) Order 2010, the Welsh Ministers and Planning Inspectorate are responsible for the determination of applications for 'Harbour Orders' in England and Wales. Harbour Orders which authorise the carrying out of development works are known as 'works orders'.

Section 14 of the HA 1964 allows for the Welsh Ministers to make a Harbour Revision Order (HRO) "in relation to a harbour which is being improved, maintained or managed by a harbour authority in the exercise and performance of statutory powers and duties...for achieving all or any of the objects specified in Schedule 2".

Section 14 also requires an application to be made in writing to the Welsh Ministers by "the authority engaged in improving, maintaining or managing it or by a person appearing to him to have a substantial interest or body representative of persons appearing to him to have such an interest".

Holyhead Marina Ltd intend to make an application to the Welsh Ministers for an HRO under Section 14 of the Harbours Act 1964 to allow for the construction of the proposed scheme.

3.2.2 The EIA Directive

The EIA Directive (85/337/EEC) is in force since 1985. The purpose of the EIA Directive is to ensure that the Competent Authority, in relation to development that is likely to have significant effects on the environment, has appropriate information to enable it to come to a decision on whether or not to grant consent. The EIA Directive sets out procedures that must be followed for such projects before they can be given 'development consent'.

The EIA Directive applies to a wide range of defined projects, which are defined in Annexes I and II of the Directive: All projects listed in Annex I are considered as having significant effects on the environment and require an Environmental Impact Assessment (EIA). Projects listed in Annex II to the Directive are not automatically subjected to an EIA. Member states can decide to subject them to assessment on a case-by-case basis or according to thresholds and/or criteria as set out in Annex III to the Directive.

For proposals that require a HRO, in accordance with the Harbours Act 1964, The EIA Directive, is implemented *inter alia* by The Harbour Works (EIA) Regulations 1999 (as amended). It is through this set of Regulations that the requirement for EIA may arise. As stated in Part II –

“Harbour works constituting a project which is of a description mentioned in Annex II to the Directive shall be treated for the purposes of this Part as not falling within that Annex unless:

- a. *the area of the harbour works exceeds 1 hectare,*
- b. *any part of the harbour works is to be carried out in a sensitive area, or*
- c. *the appropriate Authority determines that the harbour works constituting the project shall be treated for the purposes of this Part as falling within that Annex.”*

Though the project has not yet been formally ‘screened’ for the purposes of EIA, it is considered that the proposed scheme falls under Annex II (12) *Tourism and Leisure (b) Marinas*.

As the project falls under Annex II (12)(b) of the EIA Directive, an application for the HRO and marine licence will require an accompanying Environmental Impact Assessment Report (EIAR) to be submitted.

3.2.3 The Marine and Coastal Access Act 2009

Part 4 of the Marine and Coastal Access Act 2009 provides a framework for the marine licensing system for those ‘licensable marine activities’ undertaken within the UK marine area. Listed under the licensable marine activities are:

- To deposit any substance or object within the UK marine licensing area, either in the sea or on or under the sea bed.
- To construct, alter or improve any works within the UK marine licensing area either in or over the sea, or on or under the sea bed.
- To carry out any form of dredging within the UK marine licensing area (whether or not involving the removal of any material from the sea or sea bed).

Holyhead Marina Ltd intend to make an application for a Marine Licence under Part 4 of the Marine and Coastal Access Act (MCAA) 2009 to carry out works below the level of Mean High Water Spring (MHWS) tides (including deposits and removals) within the UK marine area. Natural Resources Wales (NRW) is the regulatory authority for marine licensing in Welsh inshore waters.

3.2.4 Town and Country Planning Act 1990

The Town and Country Planning Act 1990 is an act of the United Kingdom Parliament regulating the development of land in England and Wales. It is a central part of English land law in that it concerns town and country planning in the United Kingdom. Holyhead Marina Ltd intend to make an application for Planning

Permission under The Town and Country Planning Act 1990, as amended for works carried out down to the Mean Low Water mark (MLWM).

The Holyhead Marina Rebuild Project when completed will be situated above the MLWM and therefore an application for Planning Permission will be also be determined by Anglesey County Council.

3.2.5 The Conservation of Species and Habitats Regulations 2010 (as amended)

The Conservation of Species and Habitats Regulations 2010 (the Habitats Regulations) implements European Commission (EC) Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (the Habitats Directive) in the United Kingdom (UK). In accordance with Section 61 of the Habitats Regulations, an Appropriate Assessment (AA) is required for any plan or project, not connected with the management of a European site, which is likely to have a significant effect on the site either alone or in combination with other plans and projects.

European sites comprise Special Protection Areas (SPAs), as designated under Council Directive 79/409/EEC (the Wild Birds Directive), and Special Areas of Conservation (SACs), as designated under Council Directive 92/43/EEC (the Habitats Directive). An AA is also required as a matter of government policy for potential SPAs (pSPAs), possible SACs (pSACs) and Ramsar sites for the purpose of considering development proposals affecting them (DCLG, 2012).

Should the works, either alone or in combination with other plans or projects, be deemed to have a Likely Significant Effect (LSE) on any European sites (or it cannot be determined that there would not be a significant effect), then an AA must be undertaken by the competent authorities assessing the potential implications of the proposed scheme in view of the conservation objectives of the sites, in accordance with Article 6 of the Habitats Directive. This takes the form of a Habitats Regulations Assessment (HRA).

Holyhead Marina lies within an internationally designated area, a Habitats Regulations Assessment (HRA) will be required for the Holyhead Marina Rebuild Project under the Conservation of Habitats and Species Regulations 2010. Any potential impacts to these sites will need to be considered in a shadow HRA document that will support the relevant statutory authority in carrying out a formal HRA. Within this supporting information details of any proposed mitigation measures will need to be provided.

3.2.6 Wildlife and Countryside Act 1981 (as amended)

Under the terms of Section 28(4)b of the Wildlife and Countryside Act 1981, as amended by Schedule 9 to the Countryside and Rights Of Way Act (CROW) 2000, any operations within, or adjacent to, a Site of Special Scientific Interest (SSSI) require assent from Natural Resources Wales (NRW). Assent under Section 28 of the Wildlife and Countryside Act 1981 (as amended by the CROW 2000) is normally included in NRW's overall advice regarding the requirement (or otherwise) for an AA under the Habitats Regulations, where SSSIs are covered by European sites.

The Holyhead Marina Rebuild Project is located within 2km of the following SSSIs: Beddmanarch–Cymyran SSSI and, Holy Island Coast SSSI and therefore subject to SSSI assent prior to the commencement of any construction works.

3.3 Marine Planning Policy

The main national and regional policies applicable to the proposed scheme are outlined in the following sections.

3.3.1 Marine Policy Statement

The UK Marine Policy Statement applies to all UK waters and has been adopted by the UK Government, the Scottish Government, the Welsh Assembly Government and the Northern Ireland Executive.

This Marine Policy Statement (MPS) is the framework for preparing Marine Plans and taking decisions affecting the marine environment. It will contribute to the achievement of sustainable development in the United Kingdom marine area. It has been prepared and adopted for the purposes of section 44 of the Marine and Coastal Access Act 2009.

The objectives of the Marine Policy Statement are to:

- Promote sustainable economic development; enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects;
- Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets; and
- Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues.

The Marine Policy recognises that the sea can provide a variety of tourism and recreational opportunities. These activities include pleasure boating and sailing and recreational diving (including diving on wrecks), sea angling, kayaking and surfing. All these activities can generate a considerable amount of income for the economy and can be a mainstay for many coastal towns, supporting their quality of life, and providing health and well-being benefits, with many local businesses relying on the marine environment for their livelihoods.

The Welsh National Marine Plan is currently being developed by Welsh Government to cover Welsh inshore and offshore waters in accordance with the UK Marine Policy Statement which provides a framework for preparing marine plans and taking decisions affecting the marine environment. The MPS is intended to assist in achieving sustainable development in the UK marine area. The Welsh National Marine Plan is advanced but still in development but the guidance, legislation and principles must be applied to ensure that marine resources are used in a sustainable way in line with high level objectives.

4 CONSULTATIONS

As part of the EIAR screening and scoping study, informal consultation was carried out with key consultees for the following purposes:

- To determine the particular concerns of consultees about the proposed development;
- To obtain existing information and data about the site; and
- To discuss the scope of the work required during the EIAR to investigate the potential significant impacts.

A list of these consultees and their response is included in Appendix C and summarised in Table 4-1 below. Please note that the names and contact details of correspondents has been blanked out in line with GDPR regulations.

Table 4-1 Summary of consultations with stakeholders/government departments

Consultee	Response
Natural Resource Wales	• Consultation with NRW regarding <i>Didemnum vexillum</i>. • NRW kindly supplied Holyhead Marina with the report entitled: <i>Didemnum vexillum</i>: survey of distribution and extent in Holyhead Harbour after storm Emma, October 2018 – Included in Appendix B
Isle of Anglesey County Council	• IACC kindly supplied Holyhead Marina with a response to pre application advice in relation to the rebuilding of Holyhead Marina (application reference PAM/2019/9) – Included in Appendix A
Cadw – Historic Environment Service	• Response included a list of Scheduled Ancient Monument and listed buildings. • During the EIA process, It is recommended that rather than applying an arbitrary 1km search area around the proposed development to identify that the potential impact of the proposed development on the designated heritage assets, the assets that should be included in the assessments should have views to the existing marina area. An initial list of these assets are given above, but these will need to be checked on site in accordance with Section 1 of the Welsh Government guidance “The Setting of Historic Assets in Wales”. • It is noted that on-site geophysical surveys will be carried out, that will identify artefacts buried in the muds underlying the development area and also to identify any wrecks in the area. These works should be

Consultee	Response
	carried out in accordance with the Standard and Guidance for Geophysical Survey set by the Chartered Institute for Archaeologists.
Gwynedd Archaeological Trust	- The main archaeological issues are expected to be identification and mitigation of impacts on any seabed remains. GAT are interested to know more about what surveys are planned and would recommend that these are made available to an archaeological contractor with appropriate expertise so that they can compile an archaeological assessment to support the various consenting processes, establishing the nature of seabed archaeology at the site and informing the future mitigation strategy. - Recommendation to carry out a dive survey to complement any remote surveys that are undertaken as part of the EIAR.
Bangor University – School of Ocean Sciences	Recognition that there are a number of non-native species prevalent in ports and marinas around the UK so any consideration of this matter should recognise it's not only a <i>Didemnum vexillum</i> issue.
Royal Yachting Association (RYA)	RYA welcomed the opportunity to provide an opinion on the scoping report and will welcome further consultation as the proposal develops
Trinity House	Trinity House has no objections to the initial proposals and will confirm/consent to any marking requirements in consultation with the Stenaline Holyhead under section 78 of the Harbours Docks and Piers Clauses Act 1847 once a formal application has been made to Natural Resources Wales. Note: Section 78 states: The undertakers shall not erect any lighthouse or beacon, or exhibit or allow to be exhibited any light, beacon, or sea-mark, without the sanction in writing of the said Corporation of Trinity House, of the said Corporation for preserving and improving the Port of Dublin, or of the said Commissioners of Northern Lights, respectively, according as the harbour, dock, or pier is situated in England, Ireland, or Scotland, first having been obtained in that behalf; and if any such light, beacon, or sea-mark be exhibited with such sanction as aforesaid, the same shall not be afterwards altered without the like sanction; and every such light, beacon, and sea-mark shall be of such power and description, and shall be from time to time discontinued or altered, as the said Corporation or Commissioners respectively shall from time to time direct.

Consultee	Response
Irish Sea Offshore Racing Association (ISORA)	Letter of support for the Holyhead Marina Rebuilt Project
Holyhead Group	- Letter of support for the Holyhead Marina Rebuilt Project - Suggested that it might be worth considering protecting the entire harbour as opposed to just the marina - Recognised that stone from Scotland could be costly and highlighted that a small barging operation from the inner harbour or Port Penrhyn could be established to use more local material
Regional Tourism Forum / Ribride	Letter of support for the Holyhead Marina Rebuilt Project and highlights the clear need for the rebuild project.
Holyhead Maritime Museum	Letter of support for the Holyhead Marina Rebuilt Project
Office of the Minister for the Environment, Energy and Rural Affairs	Recognise the damage caused by Storm Emma in March 2018
British Marine Federation	- Recognises the importance of Holyhead Marina in terms of recreational marine traffic and its ideal location for refuelling and shelter in rough weather. - Recognises that the reconstruction of the Marina will provide an opportunity to create a first class facility for the future that delivers leisure experiences to existing and new boaters while delivering financial benefits to the local community.
Holyhead Town Council	A Consultation presentation to Holyhead Town Council took place on the 4th of February 2019. The presentation to Holyhead Town Council included a handout with sketch visuals for the purposes of informing the local community and obtaining feedback on the proposals. The following text was distributed to Members and the Town Clerk recorded the general content in the minutes: <i>“The purpose of this short presentation to the Town Council today is to inform local elected representatives of our community about the plans to re-build Holyhead Marina after its destruction last March by Storm Emma. As you are well aware this unprecedented weather system seriously damaged the promenade, the outer breakwater and the marina pontoons leading to the loss of some 80 vessels, release of polystyrene into the aquatic environment and</i>

Consultee	Response
	causing a major economic setback for the local economy. Fortunately nobody was killed or injured in the disaster but the aftermath has been difficult despite positive support from the Welsh Government, the County Council and our elected representatives in Cardiff and Westminster. The loss of the marina has seriously affected the local economy. Holyhead is the only true tidally unrestricted harbour in the region and demand for berthing is extremely high. Holyhead is strategically positioned with excellent transport links and perfect location to serve vessels on passage in the Irish Sea. After the Storm the Company commissioned harbour experts to analyse the weather system which destroyed the pontoons. The conclusions were clear – global warming/climate change has caused an increase in extreme weather systems and it will not be possible to re-build the marina using floating breakwaters which cannot survive a repeat of such a storm. The harbour experts recommend that the only feasible way forward is to protect the marina lease area with a solid rubble mound harbour wall. Holyhead Marina is still very much in business through its boatyard facility and temporary pontoon landing stage which will serve visitor demands while the re-build is organised. All the shore side infrastructure remains in place including car parking, showers, toilets, reception offices and marina amenities. The re-build plans represent a multi-million pound investment in the harbour and is eagerly awaited by an established customer base and the nationwide yachting fraternity. This project looks ahead to a permanent safe harbour for Holyhead but the consenting process is complicated requiring a Harbour Revision Order from the Welsh Ministers, marine construction permits from Natural Resources Wales and a Planning permission from the County. All will require detailed assessment of the environmental implications of this type of permanent construction in the harbour and this process requires a consultation process not only with statutory consultees like the Harbour Authority and Trinity House but also with local community groups and elected local representatives. Holyhead Town Council is considered to be the most important first consultee and it is for this reason that we are making this presentation today. We are aware of the blight and uncertainty caused by various speculative proposals on Holyhead's waterfront and around the Soldiers Point headland. These proposals are consented in Outline but nothing has happened in the many years of the Landlord's involvement with the harbour owners, Stena Line Ports Ltd. It

Consultee	Response
	<i>has not been possible to encourage a more “joined up” approach by all the harbour users so it is Holyhead Marina’s mission to proceed independently and with determination to re-build the marina within its established lease boundaries and build a 400 – 500 berth marina regardless of any other projects apparently on the table at this time.</i> <i>What we would like to do today is to gauge Members’ responses to our proposals and listen to any comments which can be integrated with the detail of our scheme as we progress the complicated consenting process.</i> <i>We would ask that the Town Clerk minutes the general content of this consultation which will form part of a report to be submitted to the Welsh Ministers. It is therefore important that you speak freely and express any concerns you may have about our plans. For example if you hold strong views on whether or not public access should be allowed as an extension of the promenade, please say so. Also if you have any concerns about what the new harbour might look like against a backdrop of historical assets and protected areas of natural beauty – please say so. Of equal importance is the natural environment – do you have any concerns about birds, marine mammals or fisheries?</i> <i>We will circulate this presentation along with some maps, photographs and sketch impressions. Our policy will be openness and transparency so we will endeavour to answer any queries as best we can. We want to embark on this process with a view to making Holyhead Marina the premier destination in this sector of the Irish Sea, we want to protect and expand our business to create and protect jobs and we want businesses to prosper around us. Please feel free to help us develop the right sort of project for Holyhead without destroying existing assets and without unduly affecting the natural environment.</i> <i>As representatives of the local community any comments, representations or ideas will be gratefully received and carefully considered in this process.</i> <i>The proposals were received warmly and the prospect of creating a publicly accessible extension of the promenade was welcomed. There was a general recognition of the economic importance of the facility on the local economy and the Council supported the principle of a re-build behind a permanent harbour wall. The meeting minutes are a matter of public record.</i>
Waterfront Action Group	The Waterfront Action Group (WAG) welcomed the opportunity to provide comment on the Holyhead Marina Re-build Strategy.

Consultee	Response
	WAG formed to campaign against the Waterfront Development proposed by Conygar. The primary aim of the group is to retain Newry Beach, Promenade and Greens in a form that is in keeping with its adjacent AONB status and to maintain this area as a significant recreational amenity for the local and wider community. WAG have considered the consultation report from the viewpoint of impact on the immediate and local community, Holyhead and Anglesey. The response notes that the pre-consultation document goes some way to address pertinent issues, however, there is a lack of detail in addressing considerations of the effects of the construction processes on the immediate and local communities affected by the Re-Build project, particularly in relation to other major construction projects planned for the area. It is also noted that there is no mention of Trinity Court in the report, the residential and commercial area immediately adjacent to the construction site. WAG have noted that full consideration should be given to the cumulative effects of proposed infrastructure support and visual effects, in the design of the re-build, on the Trinity Court Development and its residents. In addition, noise, air pollution (dust and diesel fumes), safety and disruption must be addressed, given the proximity of Trinity Court and its residents to the Marina.

5 EXISTING ENVIRONMENT

This chapter considers the potential impacts of the proposed scheme on the surrounding environment under the following subheadings: Biodiversity; Soils, Geology, Hydrogeology & Hydrology; Water Quality; Flood Risk Assessment; Air Quality & Climate Change; Noise & Vibration; Coastal Processes; Traffic and Transportation; Archaeology & Cultural Heritage; Landscape and Visual; Waste; Population, Human Health & Socio Economics and Major Disaster & Accidents.

Each subheading will provide a description of the existing baseline conditions based on available data, highlight the potential environmental effects of the scheme on the environment (if any), make recommendations of the proposed approach to the EIAR (i.e further investigations that may be required) and where appropriate recommend preliminary mitigation measures that could be applied during the construction and/or operational stage of the project.

The study also highlights the topics that have the potential to be scoped out from further assessment. Scoping out will be justified on the basis of any of the following:

- A topic is irrelevant, due to the nature of the works on the receiving environment.
- The proposed development results in negligible impacts and is located in an area that is not environmentally sensitive to the anticipated effects.
- Effects on a particular receptor are considered to be below the significance threshold; or
- Any design or mitigation measures proposed will avoid the particular environmental effect.

5.1 Biodiversity

5.1.1 Baseline Conditions

5.1.1.1 Designated Areas

The following designated sites are considered as part of the baseline assessment for the marina development site.

Glannau Ynys Gybi - Holy Island Coast SAC

The Annex I habitats that are a primary reason for the selection of the Holy Island Coast SAC are; vegetated sea cliffs of the Atlantic and Baltic Coasts; and, European dry heaths. Holy Island has hard rock acidic cliffs and supports important examples of coastal cliff heathland vegetation. In addition to maritime heath with several rare species such as spotted rock-rose *Tuberaria guttata*, there are extensive maritime cliff-crevice and grassland communities (JNCC, 2016b). As shown in Figure 5-1, the Holyhead Marina Development site is located approximately 1km west from the centre of Holyhead Port, to the west of the Outer Breakwater.

North Anglesey Marine pSAC

The North Anglesey Marine site has been recognised as an area with predicted persistent high densities of the Annex II species harbour porpoise (*Phocoena phocoena*). This site is a single feature site, proposed for designation solely for the purpose of aiding the management of harbour porpoise populations throughout UK waters, in accordance with European Union (EU) legislation.

The area included within the site covers important summer habitat for porpoises, which was identified as part of the top 10% persistent high density areas for the summer seasons within the UK. The site covers an area of 3,249km² and includes areas both within Welsh Territorial waters and UK waters outside the 12 nautical mile limit and is therefore a joint responsibility of the Joint Nature Conservation Committee (JNCC) and NRW. As shown in Figure 5-1, the Holyhead Marina Development site is located within the North Anglesey Marine SAC.

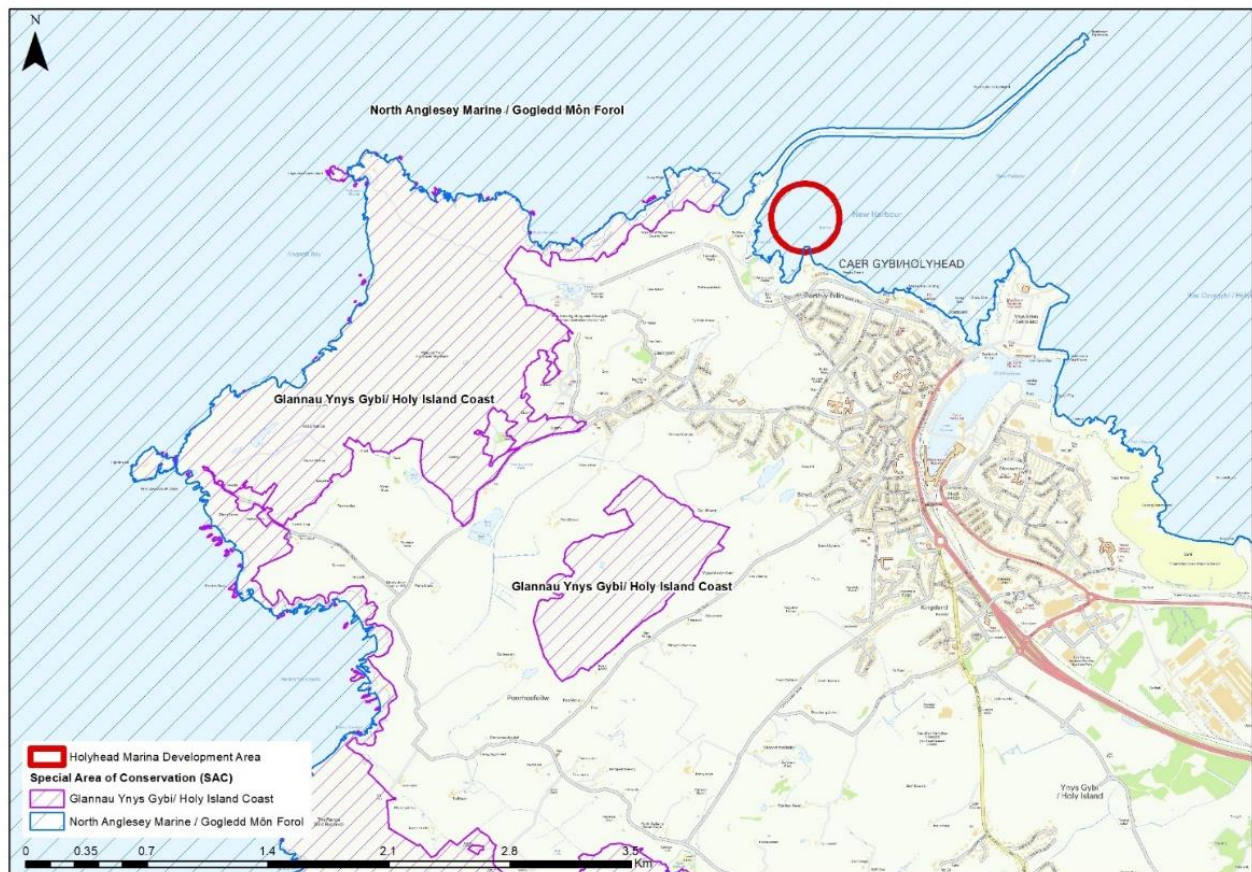


Figure 5-1 Special Areas of Conservation (SAC)

Holy Island Coast SPA

The Holy Island Coast SPA sites lies approximately 2km west of Salt Island and predominantly consists of sea-cliffs (rising 120m above sea level) and grasslands. The site is designated due to its support of a resident population of Chough (*Pyrrhocorax pyrrhocorax*), which are dependent on the diverse habitats of the site and the low levels of agricultural management, both during the breeding (protected by the Wildlife and Countryside Act 1981) and wintering periods (listed under Annex 1 of the EC Birds Directive 1979). Present at the site are 18 pairs (5.3% of the UK breeding population and 2.6% of the UK wintering population) (JNCC, 2001).

As shown in Figure 5-2, the Holyhead Marina Development site is located approximately 1km west from the centre of Holyhead Port, to the west of the Outer Breakwater.

Anglesey Terns SPA

The Anglesey Terns / Morwenoliaid Ynys Môn pSPA extends around most of the east, north and west coasts of Anglesey, generally from the mean high water mark out to between 10 and 20 km from the shore. It is being proposed as a marine extension to the existing SPA designated in 1992 to protect the breeding tern colonies at Ynys Feurig, Cemlyn Bay and the Skerries, to include the marine area used by the foraging terns during the breeding season. No new protected species are proposed.

As shown in Figure 5-2, the Holyhead Marina Development site is located within the Anglesey Terns SPA, however all breeding tern colonies (Ynys Feurig, Cemlyn Bay and the Skerries) are located greater than 10km away from the Holyhead Marina Site.



Figure 5-2 Special Protection Areas (SPA)

Beddmanarch-Cymyran SSSI

Beddmanarch–Cymyran SSSI covers just over 90 Ha. It was first notified in 1961 for its coastal botanical and ornithological interest. There are large areas of sandbank, mudflat and saltmarsh, as well as two stands of dune heath. A wide range of water birds, both on passage and in winter, are attracted to the area which is especially important for overwintering ringed plover, greenshank, red breasted merganser and goldeneye (Anglesey Nature, 2016a). The closest point of the SSSI site is approximately 3.5km southeast of the Holyhead Marina Rebuild Project.

REPORT

Holy Island Coast SSSI

This site is of special interest for its geological and biological features, including heathland and maritime grassland communities, coastal cliffs and ledges, its assemblages of vascular plants and birds, invertebrates and its solid geology (Anglesey Nature, 2016b). The site lies on the north-west corner of Holy Island and includes the most westerly point on Anglesey. The closest point of the SSSI site is approximately 1km west of the Holyhead Marina Rebuild Project, to the west of the Outer Breakwater.

Tre Wilmot SSSI

This site is a large area of acidic, lowland heath overlying a series of rocky ridges and intervening depressions, which give rise to a range of heathland vegetation communities. The well drained heath on the ridges is dominated by ling *Calluna vulgaris* and western gorse *Ulex gallii*, with spring squill *Scilla verna* and, on rock outcrops, English stonecrop *Sedum anglicum*. The lower-lying areas support wet heath or peatland communities, with species such as crossleaved heath *Erica tetralix*, purple moor-grass *Molinia caerulea*, common cotton grass *Eriophorum angustifolium* and creeping willow *Salix repens*. Of particular note is a very large population of marsh gentian *Gentiana pneumonanthe* and, in small open water areas, pillwort *Pilularia globulifera*; both these species have decreased markedly over the country as a whole with progressive reclamation of their habitats.

The closest point of the site is approximately 1.7km south southwest of the Holyhead Marina Rebuild



Figure 5-3 Special Sites of Scientific Interest (SSSI)

South Stack Cliffs RSPB Reserve

The South Stack Cliffs RSPB is comprised of heathland, farmland and marine stacks and caves. These habitats are importance to breeding seabirds and choughs on the site. South Stack Cliffs has a number of birds on site that raise their young in the area, including guillemots, peregrine, razorbills and puffins, with up to 9,000 seabirds nesting on the site. Chough are also seen on the reserve, with 11 breeding pairs present (RSPB, 2013).

Fulmar (*Fulmarus glacialis*), cormorant (*Phalacrocorax carbo*), black headed gull (*Chroicocephalus ridibundus*), herring gull (*Larus argentatus*), great black backed gull (*Larus marinus*), kittiwake (*Rissa tridactyla*) and guillemot are all IUCN Amber List species, with the exception of herring gull which is on the red list. UK Bap species have breeding colonies within foraging distance of the offshore scoping area. In particular, the cliffs of the South Stack provide nesting sites for large numbers of puffin, razorbills and guillemots (as well as choughs and peregrine falcons).

The closest point of the site is approximately 3.0km west of the Holyhead Marina Rebuild Project, covering much of the west coastline of Holy Island.

5.1.1.2 Benthic Biodiversity & Fisheries

There are a number of shellfish species of interest to fishermen in the area surrounding the Holyhead Marina Redevelopment. Interests include crabs, lobsters and mussels.

There is also an active mussel fishery located south east of Holyhead Port in Penrhos Bay adjacent to the Valley Cob where seed stocks are laid before transfer to the mussel beds in the Menai Straits. There is also a planned oyster/clam/mussel area to the east of the Port.

Commercial fishing in the waters around Holyhead Port is primarily based around potting for shellfish. Holyhead Port is an active fishing harbour largely landing queen scallops, whelks, king scallops and lobsters fished in inshore waters.

5.1.1.3 Marine Mammals

All cetacean species (whales, dolphins and porpoises) occurring in European waters are listed as Annex IV species and protected under the EC Habitats Directive (prohibiting deliberate capture, killing, disturbance and deterioration or destruction of breeding sites or resting places). There are five species further listed as Annex II species of community importance (bottlenose dolphin, harbour porpoise, grey seal, harbour seal, otter) and require the designation of Special Areas of Conservation (SACs) for their protection.

The west coast of Anglesey has one of the highest diversities of marine mammals within the Celtic and Irish Seas (Baines and Evans, 2012). There are three species of marine mammal that are common on or near to Holyhead Port: harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*) and grey seal (*Halichoerus grypus*). There are also several species that have the potential to be near including: common dolphin (*Delphinus delphis*), Risso's dolphin (*Grampus griseus*), minke whale (*Balaenoptera acutorostrata*) and harbour seal (*Phoca vitulina*).

5.1.1.4 Avian Biodiversity

As required by Article 4 of the Birds Directive, the purpose of SPAs is to enable the application of special conservation measures concerning the habitats of Annex 1 species and/or regularly occurring migratory species (other than those listed in Annex 1) in order to ensure their survival and reproduction in their area of distribution. As highlighted above, the Holyhead Marina Redevelopment Project falls within the Anglesey Terns pSPA. The SPA is designated for following Annex 1 species of seabirds: Common tern - *Sterna hirundo* (breeding); Arctic tern - *Sterna paradisea* (breeding); Roseate tern - *Sterna dougalli* (breeding) and Sandwich tern *Sterna sandvicensis* (breeding). While the site falls within the pSPA boundary, all breeding tern colonies located at Ynys Feurig, Cemlyn Bay and the Skerries are located greater than 10km away from the Holyhead Marina Site.

5.1.1.5 Invasive Species

It is illegal under section 14 of the Wildlife and Countryside Act 1981 (as amended) to plant or otherwise cause to grow in the wild any plant listed in Schedule 9 to the Act. Although it is not listed on Schedule 9 of the Act, the carpet sea squirt (*Didemnum vexillum*) is an invasive non-native species that has been found in Holyhead Marina. The carpet sea squirt is a filter feeding marine invertebrate that forms large colonies carpeting hard structures on which it grows. The presence of this non-native species can have considerable effect on pre-existing sessile surface communities through over growth interactions as well as threaten fishing and shellfish industry and the conservation of native marine habitats.

5.1.2 Potential Environmental Effects

Potential impacts to Biodiversity during the construction and operation phase of the Holyhead Marina Rebuild Project includes:

- Potential effects of the Holyhead Marina Rebuild Project on Benthos & Fisheries from an increase in suspended sediment during the construction of the marina and rubble mound breakwater
- Potential effects of the Holyhead Marina Rebuild Project on Benthos & Fisheries from physical loss of habitat as a result of the new breakwater.
- Potential effects of the Holyhead Marina Rebuild Project on Marine Mammals from underwater noise and potential collision with construction vessels.
- Potential effects of the Holyhead Marina Rebuild Project on Avian Biodiversity from the permanent habitat loss arising from the construction of the rubble mound breakwater and potential disturbance through construction traffic and potential changes in prey availability arising from construction activities.
- Potential effects of the Holyhead Marina Rebuild Project on the spread of Invasive Species (I,e *Didemnum vexillum*) through the removal/re-use of old structures.
- Potential effects of the Holyhead Marina Rebuild Project on the qualifying interests of local and EU designated areas.

- Potential effects of the Holyhead Marina Rebuild Project on Biodiversity as a result of accidental pollution events (oil/fuel spill) during construction and operation.

5.1.3 Proposed approach to the EIAR

Benthic Biodiversity & Fisheries

A full marine ecology assessment will be undertaken as part of the EIAR. This will include a review of readily available information from desktop sources supported by a benthic survey at the site of the Holyhead Marina Rebuild Project and neighbouring areas.

Marine Mammals

A full marine mammal assessment will be undertaken as part of the EIAR. This will include a review of all readily available information from desktop sources at the site of the Holyhead Marina Rebuild Project and neighbouring areas. The key sources of information to be consulted will include any data collected previously within Holyhead Port as well as any additional information from local sources. If necessary, this data may be supplemented by a programme of Marine Mammal Field Surveys.

Avian Biodiversity

A full ecology assessment will be undertaken as part of the EIAR. To inform both EIAR and Habitats Regulations Assessment, an ornithology desk based assessment will be undertaken which will include a review of readily available information from desktop sources. The key sources of information to be consulted will include any data collected previously within Holyhead Port as well as any additional information from local sources. Information collated during the desk study will be supplemented by a programme of baseline data collection.

Invasive Species

The presence of the invasive species *Didemnum vexillum* (Carpet sea squirt) in the Holyhead marina will be a key consideration in terms of the potential effects of the works on marine ecology receptors. As part the EIAR a desk based impact assessment will be carried out using survey information that was collected by NRW after storm Emma (*Didemnum vexillum*: survey of distribution and extent in Holyhead Harbour after storm Emma, October 2018- Refer to Appendix B). The EIAR will assess the potential ingress and onward spread of marine non-natives species during all stages (e.g. baseline surveys for construction, operation and potential decommissioning) of the development and will include all relevant activities and pathways.

5.1.4 Preliminary Mitigation Measures

The findings of the assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant effect. The following precautionary measures have been proposed to minimise the impacts to Biodiversity in the area of the Holyhead Marina Rebuild Area.

- A trained and experienced Marine Mammal Observer (MMO) will be put in place during the construction operations. The MMO will scan the surrounding area to ensure no marine mammals are in a pre-determined exclusion zone in the 30-minute period prior to operations.
- Noise-producing activities will only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring is not possible, the sound-producing activities will be postponed until effective visual monitoring is possible. Visual scanning for marine mammals (in particular harbour porpoise) will only be effective during daylight hours and if the sea state is WMO Sea State 4 (≈Beaufort Force 4 conditions) or less.
- Preparation of draft Construction Environmental Management Plan (CEMP) that sets out the minimum requirements which will be adhered to during the construction phase of the Holyhead Marina Rebuild Project. This will include: Biosecurity Management Plans, Emergency Response Plans, Noise and Air Quality Management Plans etc.

5.1.5 Summary of Scoping Exercise

The scoping exercise has identified a number of potential environmental effects that should be scoped into the EIAR, that is: effects on birds, fisheries, marine mammals, benthic ecology and non-native species. The site also falls within Anglesey Terns SPA (designated for Breeding Terns) and the North Anglesey Marine pSAC (designated for Harbour Porpoise).

5.2 Geology, Hydrogeology & Hydrology

5.2.1 Baseline Conditions

5.2.1.1 Geology

Some of the oldest rocks in Britain are found on the Isle of Anglesey. Bedrock on Holy Island consists of mainly Pre-Cambrian rocks, notably the Mona Complex. The Mona Complex contains rocks ranging from bedded sedimentary rock to highly metamorphosed coarse grained gneiss. The Bedded Series includes a variety of rock types as illustrated in Figure 5-4

- At the base, the South Stack Group includes sandstones and interbedded shales, contorted by folds and crumples, which are exposed in the cliffs of Glannau Ynys Gybi SSSI at South Stack.
- Above these strata is the thick, rather pure Holyhead Quartzite which forms the bulk of Holyhead Mountain.
- The New Harbour Group supersedes the quartzite and consists of an alternation of fine grits and shales with inter bedded jasper and pillow lavas. The area around the Holyhead Beach falls into the geological New Harbour Group.

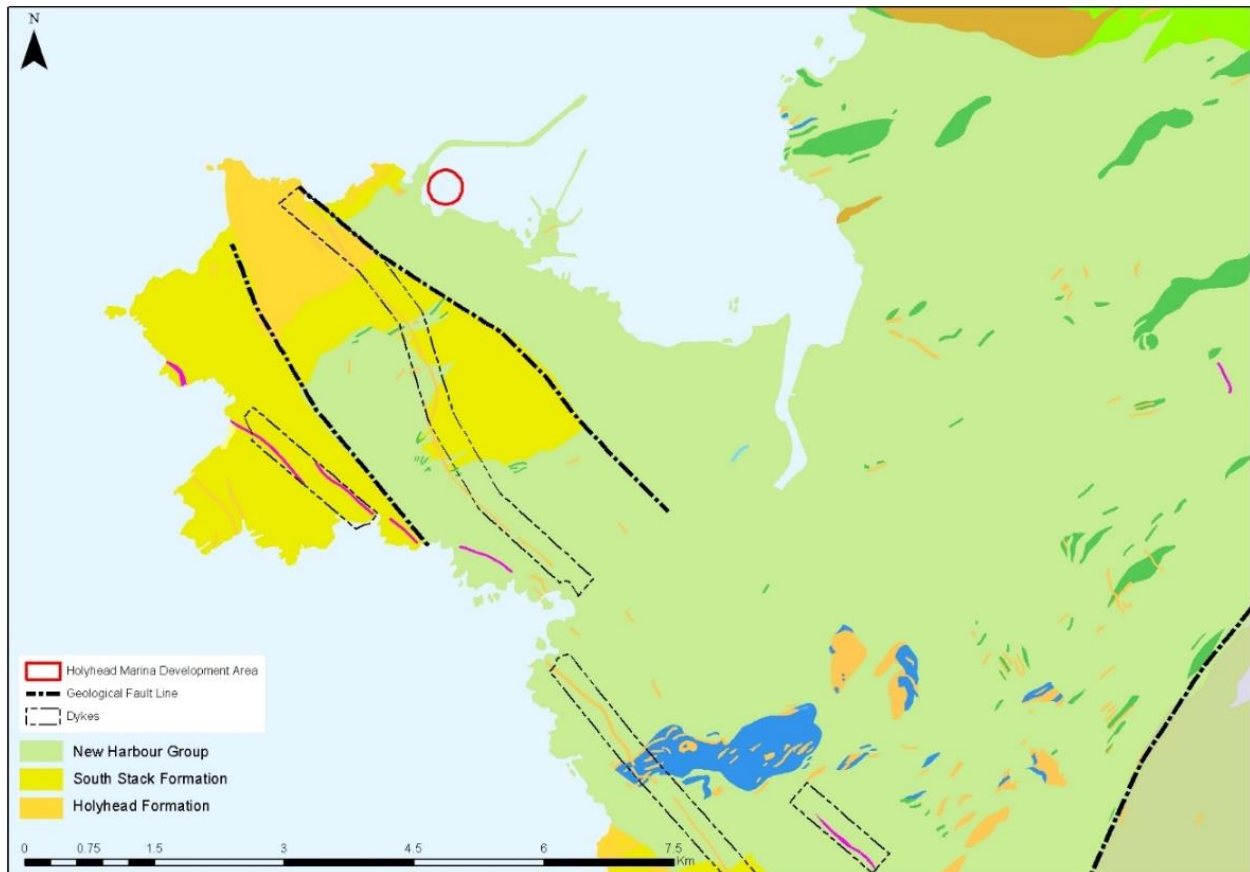


Figure 5-4 Geological Formations

Sites of Geological Importance

As illustrated in Figure 5-5 the importance of Anglesey's geology has long been appreciated and has been recognised through in the designation of a number a sites due to their geological features. A summary of each is given below:

Anglesey Geopark (UNESCO)

The Anglesey Geopark encompasses the entire Isle of Anglesey and is designated for its numerous sites of geological interest and high level of geodiversity, The Geopark was designated as a UNESCO Global Geopark in 2015.

Specific geological sites and walking trails (referred to as Geosites and Geotrails) have been selected for scientific quality, rarity, aesthetic appeal and educational value. Their interest may also be archaeological, ecological, historical or cultural (GeoMôn, 2016a). There are only two of these located on Holyhead, these include the South Stack Geotrail and Rhoscolyn Headland Geosite.

- **South Stack Geotrail.** Located approximately 3.5Km southwest of the Holyhead marina, the South Stack Geotrail exhibits folded schists and quartzites at South Stack and arches, stacks and thrust vaults at Breakwater Park to the north (GeoMôn, 2016b).

REPORT

- The Rhoscolyn headland. Located approximately 7.5km south of the Holyhead Marina, the Rhoscolyn headland features folded sedimentary rocks and inland outcrops of serpentine and mantle derived rocks (GeoMôn, 2016b).

Holy Island Coast SSSI

Holy Island Coast SSSI is of special interest for its geological features, which include the folded sedimentary rocks forming the South Stack beds which are exposed in the cliffs around South Stack Lighthouse. South Stack exhibits the most spectacular folded schists and quartzites. It is also famous for the sea birds which nest there. There are no features of geological interest within the footprint of the proposed scheme.

Geological Conservation Review Sites

Geological Conservation Review (GCR) sites are nationally and internationally important geological sites that are protected by law (JNCC, 2016a). The GCR began in 1977 and has evaluated documented and designated over 3,000 sites across Britain (JNCC, 2016a). On the Isle of Anglesey, there are 27 designated GCR sites, the South Stack GCR site is the only site located on Holyhead (South Stack). As shown in Figure 5-5, there are no features of geological interest within the footprint of the proposed scheme.

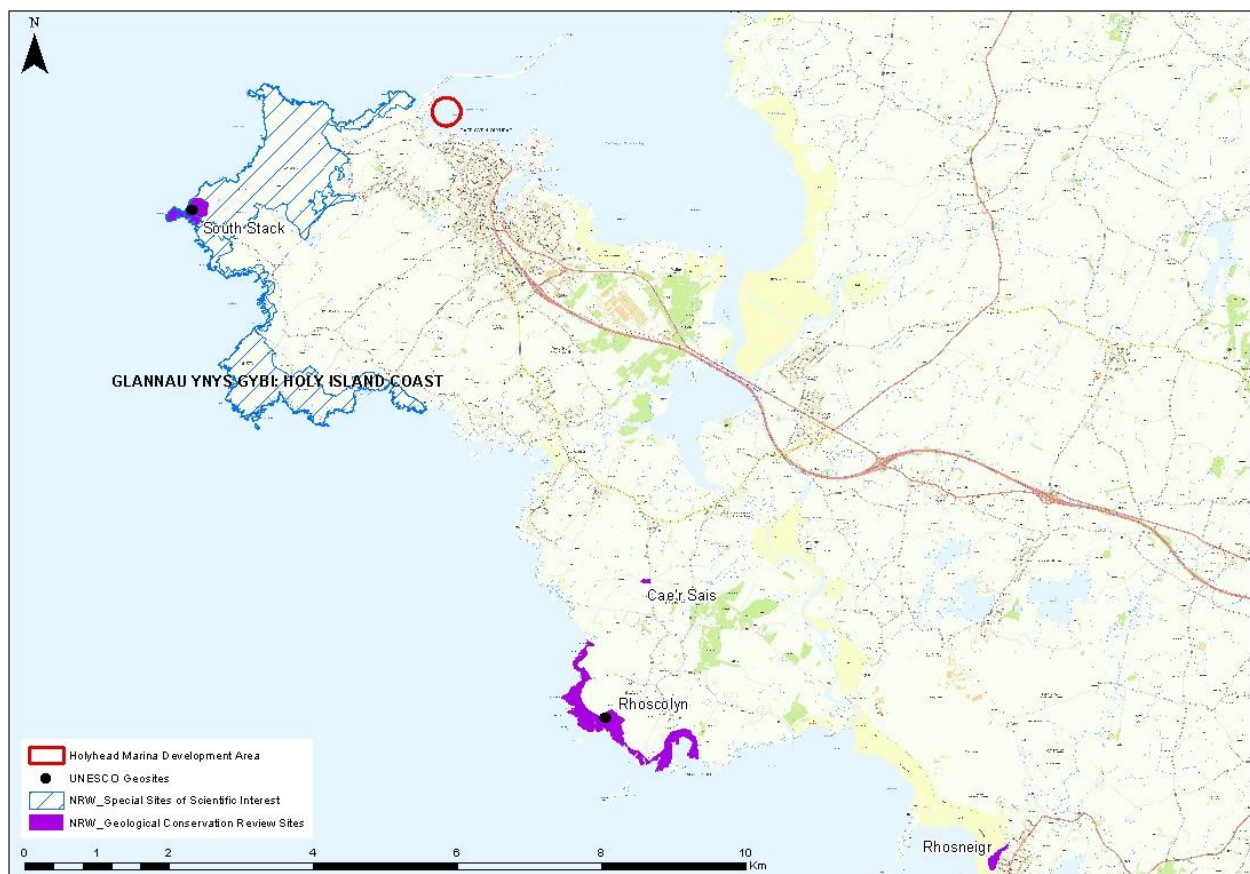


Figure 5-5 Designated Sites of Geological Importance

5.2.1.2 Hydrogeology and Hydrology

The Ynys Mor Minor groundwater body (GB41002G2044) underlies the isle of Anglesey. The Porth-y-Felin is classed as a main river and flows to the north of Holyhead, discharging into the Harbour to the south of the marina as illustrated in Figure 5-6.



Figure 5-6 Rivers discharging into Holyhead Marina

5.2.2 Potential Environmental Effects

It is unlikely that the proposed scheme will result in an impact to Soils & Geology. Potential impacts to Hydrogeology & Hydrology during the construction and operation phase of the proposed scheme include:

- Potential effects of the Holyhead Marina Rebuild Project on surface and groundwater as a result of accidental pollution events (oil/fuel spill) during construction and operation.

5.2.3 Proposed approach to the EIAR

A preliminary risk assessment (desk study) will be prepared as part of the EIAR. The preliminary assessment will be carried out within the current UK and European legislative framework with particular attention paid to the guidance set out in CLR 11 'Model Procedures for the Management of Land Contamination' published by the Environment Agency and DEFRA, UK. The Desk Study will examine the potential for sources of contamination and pollutant linkages to be present.

5.2.4 Preliminary Mitigation Measures

The findings of the Preliminary Risk Assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts.

5.2.5 Summary of Scoping Exercise

It is unlikely that the Holyhead Marina Redevelopment will result in significant impacts to Soils & Geology. It is recommended that Soils and Geology are scoped out of the EIAR.

The scoping exercise has concluded that while unlikely the Holyhead Marina has the potential to impact upon surface and groundwater during the construction phase of the project. It is recommended that these elements are assessed under the water quality chapter of the EIAR. It is also recommended that a preliminary risk assessment (desk study) is prepared as part of the EIAR. The Desk Study will examine the potential for sources of contamination and pollutant linkages to be present and recommend potential mitigation measure to address any potential impacts.

5.3 Water Quality

5.3.1 Baseline Conditions

The baseline conditions at the Holyhead Marina site have been reviewed using high level baseline information obtained from the NRW monitoring programme for the Water Framework Directive. As shown in Figure 5-7, Holyhead Marina is located within Holyhead Bay Coastal Waterbody (GB681010360000). The current status of this waterbody is “Moderate”.

The Porth-y Felin River discharges into the harbour between the Boathouse Hotel and Porth- y- Felin House. There is also a small stream outfall which flows under Beach Road and is culverted through the existing boatyard. These outfalls discharge significant quantities of fresh water into the harbour south of the marina site. There are also various drainage ditches and storm water outfalls in the locality. The Soldiers Point Landfill Site is located South West of the marina site. This historic landfill site was originally a town rubbish dump terminated probably in the 1960’s and the Porth-y-Felin river/stream is culverted through it.

Bathing Water Directive – although there is no designated Bathing Water in the harbour the shingle beaches along Newry Waterfront are used for bathing. Since the removal of sewage outfalls into the harbour the water has become clean and popular for bathers.

Shellfish Waters Directive – the WFD now addresses the requirements of the Shellfish Water Directive. The only designated Shellfish Water near the marina site is Beddmanarch Bay Shellfish Water approximately 4km south east of the marina site.

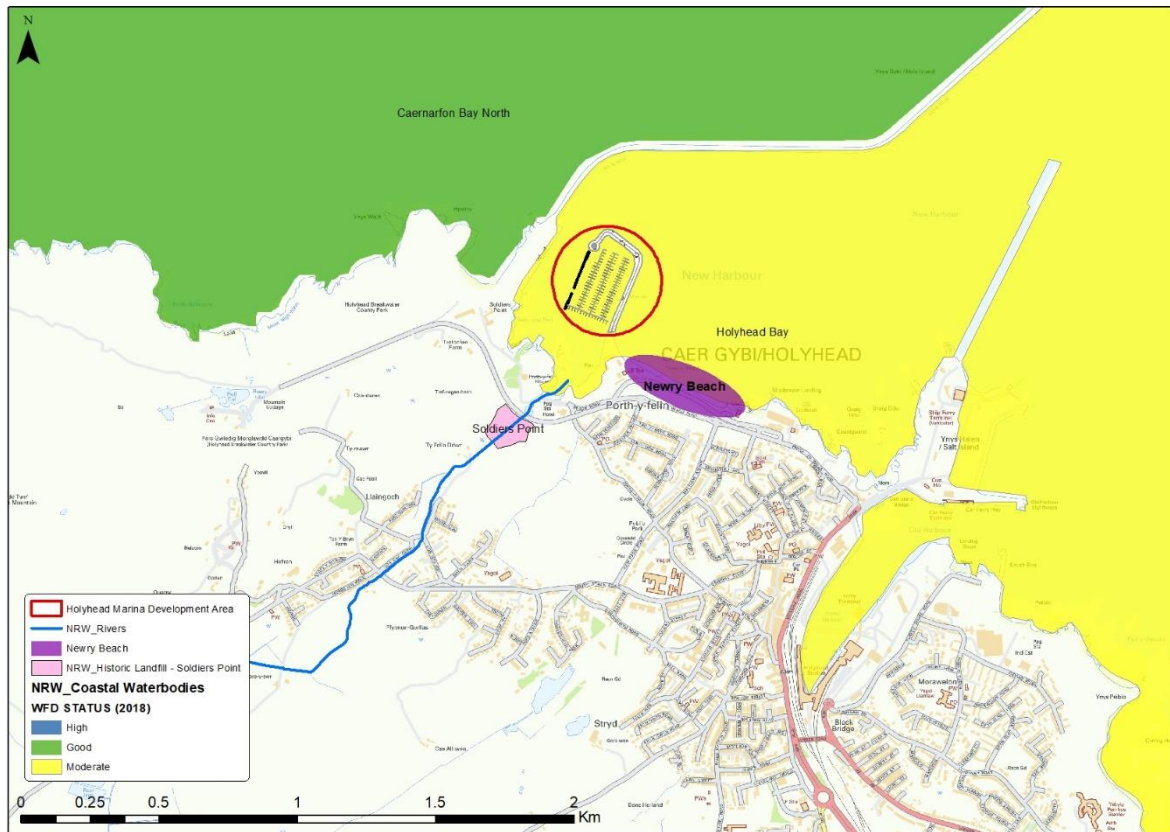


Figure 5-7 Coastal and Surface Waterbodies (NRW)

5.3.2 Potential Environmental Effects

Potential impacts to Water Quality during the construction and operation phase of the proposed scheme include:

- Potential effects of the Holyhead Marina Rebuild Project on Water Quality from an increase in suspended sediment during the construction of the marina and rubble mound breakwater.
- Potential effects of the Holyhead Marina Rebuild Project on hydrology & hydromorphology from the construction and operation of the rubble mound breakwater.
- Potential water quality impacts associated with works machinery, infrastructure and on-land operations (for example leakages/spillages of fuels, oils, other chemicals and waste water, controlled discharges under licence).

5.3.3 Proposed approach to the EIAR.

A water quality impact assessment will be undertaken as part of the EIAR. This will include a review of readily available information from desktop sources supported by water quality monitoring at the site of the Holyhead Marina Rebuild Project. This will include suite of physico-chemical monitoring on surface water sediment grab samples to assess alongside WFD and Local Authority monitoring. The outputs from surveys undertaken within the Marine Biodiversity chapter will also further inform the assessment of the impact on water quality and ecological status from the redevelopment project.

The hydromorphological impacts, associated with the operation the rubble mound structure will be addressed within the coastal processes chapter.

5.3.4 Preliminary Mitigation Measures

Initial mitigation will be included by consideration of the design in line with best practice. Where the impact assessment identifies potential impacts upon water quality and suitable mitigation measures will be proposed. This may include changes to development design, should this be deemed necessary, or recommendations for a particular construction methodology or construction material.

A draft Construction Environmental Management Plan (CEMP) will be prepared as part of the planning submission. The CEMP will be prepared to assist the main contractor in preventing, managing and/or minimising significant environmental impacts during the construction phase and will set out the minimum requirements which will be adhered to by the contractor during the construction phase of the Holyhead Marina Rebuild Project. The CEMP will contain measures to mitigate against the potential impacts from the construction, such as elevated suspended solids, concrete, oils and chemicals. This will be supplemented by contingency planning for any accidental spillages which may arise from working with fuels and chemicals.

Where necessary, monitoring programmes may also be proposed; to confirm compliance with any environmental requirements.

5.3.5 Summary of Scoping Exercise

The scoping exercise has concluded that a number of potential environmental effects on water quality at construction stage due to the construction of the rubble mound breakwater (release and dispersion of suspended sediments) and the potential impact of the breakwater structure on hydrology and hydromorphology should be scoped into the EIAR. The potential effects on water quality at operational stage as a result of drainage loading and pollution events should also be scoped in to the EIAR.

5.4 Flood Risk Assessment

5.4.1 Baseline Conditions

The NRW flood risk map indicates that all of Holyhead Port and the surrounding coastline are located within both Flood Zones 2 and 3 (Figure 5-8)

- Flood Zone 2 is land which is assessed as having between a 1 in 100 and 1 in 1,000 annual probability of (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.
- Flood Zone 3 is land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

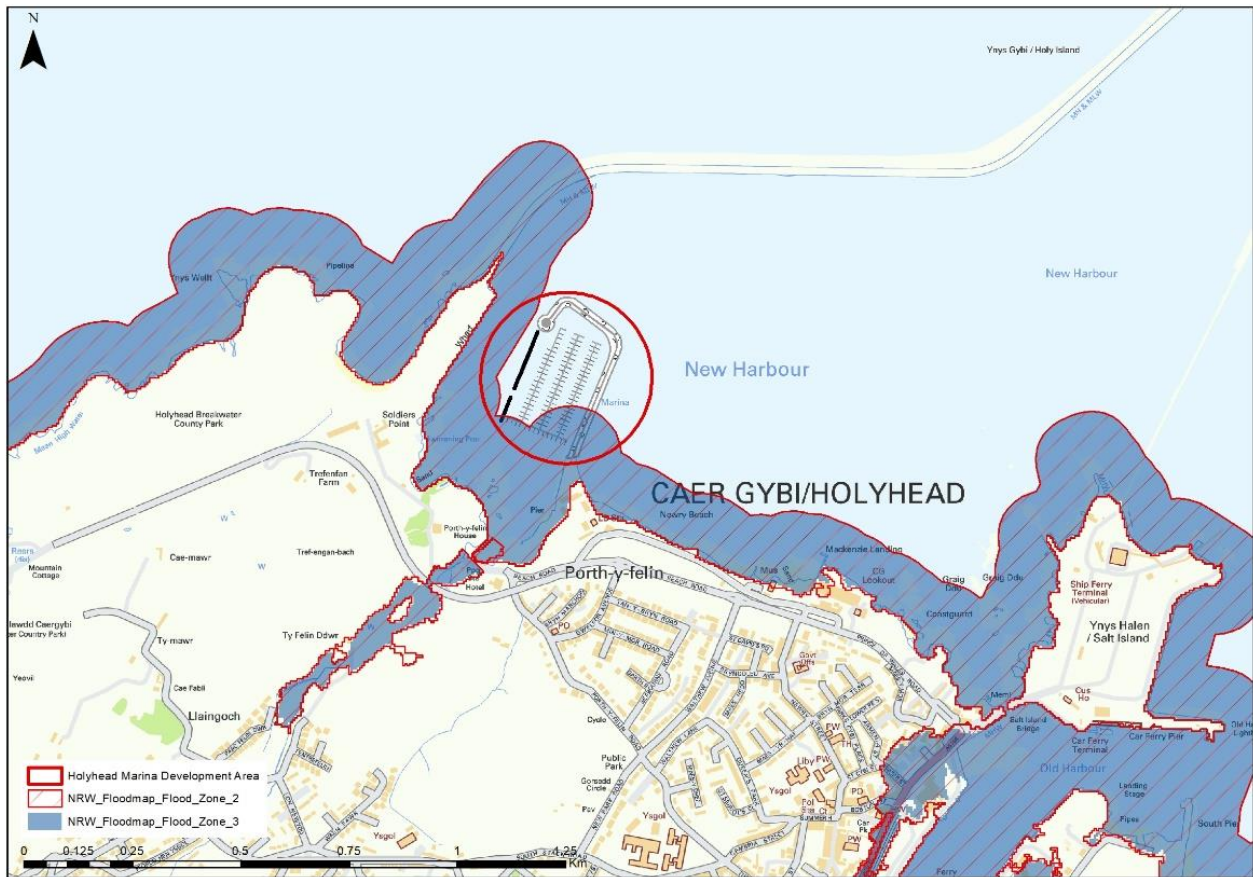


Figure 5-8 NRW Flood Map (Zones 2 & 3)

The NRW Development Advice Map (DAM) was also reviewed. For the purposes of land-use planning, the DAM shows zones at risk of flooding for the purposes of land-use planning. A description of each zone is provided below.

- Zone A - Considered to be at little or no risk of fluvial or tidal/coastal flooding.
- Zone B – Areas known to have been flooded in the past evidenced by sedimentary deposits (based on British Geological Survey 10k Superficial Geology data.)
- Zone C - Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal)
 - Zone C1 - Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.
 - Zone C2 - Areas of the floodplain without significant flood defence infrastructure.

Holyhead Marina and the surrounding coastline lie within Zone C2.

5.4.2 Potential Environmental Effects

The potential impacts on coastal defences and flood risk during the operation phase include:

- Increased risk of flooding within the area surrounding the Holyhead Marina as a result of the construction of the rubble mound breakwater.
- Increased risk of flooding within the area surrounding the Holyhead Marina as a result of Climate change and associated future sea level rise.

5.4.3 Proposed approach to the EIAR.

To further inform the flood risk baseline and design of the rubble breakwater defence, additional data and information will be required. This will include the outputs from the wave and flow modelling and coastal processes assessment.

Holyhead Marina and the surrounding coastline lie within flood zone C2, therefore the proposed scheme will require a Flood Consequence Assessment (FCA). The requirements for a FCA are set out in the Planning Policy Wales Technical Advice Note 15 (TAN 15): Development and Flood Risk (Welsh Government, 2004). A FCA is required for developments in Flood Zones C1 and C2

5.4.4 Preliminary Mitigation Measures

The findings of the coastal process assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts.

5.4.5 Summary of Scoping Exercise

The scoping exercise has concluded that the Holyhead Marina Project falls within an area at risk flooding and therefore should be scoped in.

5.5 Air Quality & Climate Change

5.5.1 Baseline Conditions

Existing sources of air pollution in the vicinity of the proposed scheme include road transport, and existing marine vessel movements associated with existing operations within Holyhead Port. The main pollutants of concern from these emission sources are likely to be those relating to fuel combustion, such as oxides of nitrogen (NO_x), sulphur dioxide (SO₂), carbon monoxide (CO) and particulate matter (including PM_{2.5} and PM₁₀).

Atmospheric pollution in the vicinity of the proposed redevelopment is largely dominated by road traffic exhaust fumes, harbour activity including boat movements, and to a lesser extent commercial and residential emissions. The closest existing residential dwellings and commercial properties to the proposed scheme are

the 26 Marina Apartments (Trinity Court), Langdons Restaurant & Bar and the Holyhead Café to the south of the Holyhead Marina.

5.5.2 Potential Environmental Effects

Potential impacts to Air Quality during the construction and operation phase of the proposed scheme include:

- Potential effects of the Holyhead Marina Rebuild Project on Air Quality from the generation of nuisance dust from the movement of HGVs and other construction plant within the site area and also from the construction of the rubble mound breakwater.
- Potential effects of the Holyhead Marina Rebuild Project on Air Quality from emissions of exhaust pollutants, from construction traffic on the local road network has the potential to adversely impact upon local air quality on sensitive receptors.
- Potential effects of the Holyhead Marina Rebuild Project on Air Quality from emissions of SO₂, NO₂, PM_{2.5} and PM₁₀ from non-road mobile machinery operating within the proposed scheme footprint, have the potential to adversely impact local air quality at sensitive receptors in close proximity to the works.

5.5.3 Proposed approach to the EIAR

An impact assessment of the Holyhead Marina Rebuild Project on air quality will be undertaken as part of the EIAR. The air quality impact assessment will examine the existing air quality situation in the vicinity of the proposed redevelopment and assesses the potential impacts for future years with and without the proposed redevelopment in place. The air quality assessment will comprise the following key elements:

- Review of the most recent The Highland Councils Progress Reports and Updating and Screening Reports;
- Presentation of DEFRA background levels (NO₂ and PM₁₀ (and PM_{2.5})) at the closest locations to the development;
- Operational Phase (Road Traffic) - Requirements for an assessment are presented and a determination is then made on the option to screen out an operational air quality assessment in accordance with The Highways Agency's Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 1 HA 207/07 for local and regional emissions;
- Operational Phase (Road Traffic) - Requirements for an assessment are presented and a determination is then made on the option to screen out an operational air quality assessment in accordance with Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) guidance (EPUK & IAQM) "Land-Use Planning & Development Control: Planning for Air Quality (January 2017);

REPORT

- Demolition Phase and Construction Phase - The air quality impacts are assessed in accordance with the requirements of IAQM (2014): Guidance on the Assessment of Dust from Demolition and Construction.
- Emissions in accordance with the requirements as set out in Local Air Quality Management Technical Guidance 2016 (LAQM.TG16).

The assessment will include appropriate reference to the following guidance documents:

- DMRB Volume 11, Section 3, Part 1 (HA207/07) Air Quality;
- Local Air Quality Management - New Technical Guidance TG(16);
- Local Air Quality Management - New Policy Guidance PG(S) (16);
- Institute of Environmental Management and Assessment (IEMA) Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2017;
- IAQM Guidance on the assessment of dust from demolition and construction (2014), and

5.5.4 Preliminary Mitigation Measures

The findings of the air quality assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts.

An important consideration during the construction phase is nuisance dust particularly during the construction of the rubble mound breakwater. Nuisance dust could cause soiling of surfaces, particularly windows and cars in local areas. Mitigation measures will be developed where appropriate to ensure that the risk of nuisance dust is reduced to a minimum.

A draft Construction Environmental Management Plan (CEMP) will be prepared and submitted as part of the planning permission. The draft CEMP will sets out the minimum requirements that will be adhered to during the construction phase of the Holyhead Marina Rebuild Project. The CEMP will contain dust suppression methods that will be applied to mitigate against potential air quality issues during the construction. The dust mitigation measures will be based upon the industry guidelines in the Building Research Establishment document entitled 'Control of Dust from Construction and Demolition Activities'.

5.5.5 Summary of Scoping Exercise

The scoping exercise has concluded that due to the potential emissions from plant and vehicles and nuisance dust levels from construction activities it is proposed that Air Quality during the construction and operation phase of the EIAR is scoped into the EIAR.

5.6 Noise & Vibration

5.6.1 Baseline Conditions

Due to the limited baseline noise data available, a baseline noise monitoring survey will be conducted within the Harbour and at nearest sensitive receptors. Noise monitoring locations will be selected so as to be representative of all groups of sensitive receptors. Noise sensitive receptors include residential properties and any non-residential buildings that may have particular sensitivities to increased noise levels (e.g. hospitals, nursing homes, educational facilities, establishments/laboratories/workshops where high precision tasks are performed etc.). Noise monitoring will be conducted over day and night time periods. The baseline noise monitoring survey including locations will be discussed and agreed in advance of commencement of the monitoring survey.

5.6.2 Potential Environmental Effects

Potential impacts to Noise & Vibration during the construction and operation phase of the proposed scheme include:

- Potential effects of the Holyhead Marina Rebuild Project on Human Beings from the generation of nuisance noise and vibration from construction activities including: importation of material, the movement of HGVs and other construction plant within the site area and the movements of construction related vehicles on public roads leading to the site;
- Potential effects of the Holyhead Marina Rebuild Project on Biodiversity from the generation of noise and vibration from construction activities including: importation of material, the movement of HGVs and other construction plant within the site area and the movements of construction related vehicles on public roads leading to the site;

5.6.3 Proposed approach to the EIAR

The proposed redevelopment does not introduce any fundamental changes to or new types of harbour operations. Therefore the impact assessment will only consider the impact of the Holyhead Marina Redevelopment Project on noise and vibration during the construction phase. A noise and vibration chapter will be submitted as part of the EIAR. The assessment report will also include an underwater noise assessment.

5.6.4 Preliminary Mitigation Measures

The findings of the noise and vibration impact assessment will be used to develop relevant mitigation measures as appropriate for the construction phases of the development to mitigate against any significant adverse impacts.

A draft Construction Environmental Management Plan (CEMP) will be prepared as part of the planning submission. The CEMP will sets out the minimum requirements which will be adhered to by the contractor during the construction phase of the Holyhead Marina Rebuild Project. The CEMP will contains measures to mitigate against construction Noise and Vibration during the construction phase.

5.6.5 Summary of Scoping Exercise

The scoping exercise has concluded that due to the limited noise and vibration data available coupled with the potential environmental effects of noise and vibration on Human Beings and Biodiversity (Avian and Marine Mammal) during the construction stage, Noise (Terrestrial & Underwater) and Vibration should be scoped into the EIAR.

5.7 Material Assets – Coastal Processes

This section presents the present baseline for coastal processes (hydrodynamics and sediment transport) and coastal geomorphology in Holyhead Port and Holyhead Bay. The study area considered for this section has been defined as Holyhead Port and the coastal and marine areas within 5km, radiating seawards from the proposed scheme.

5.7.1 Baseline Conditions

5.7.1.1 Site Location and Exposure

Holyhead marina is located in at the western end of Holyhead harbour. The harbour breakwater provides protection from storms in the Irish Sea from all directions except the North East to East sector. However the orientation of the inner face of the great breakwater known as “Soldiers Quay” adjacent to the marina site can result in reflected waves entering the marina area (Figure 5-9). The pier originally known as the “Anglesey Aluminium Jetty” at the eastern end of the harbour is mostly of open piled construction and thus provides little or no shelter to the marina from the east.

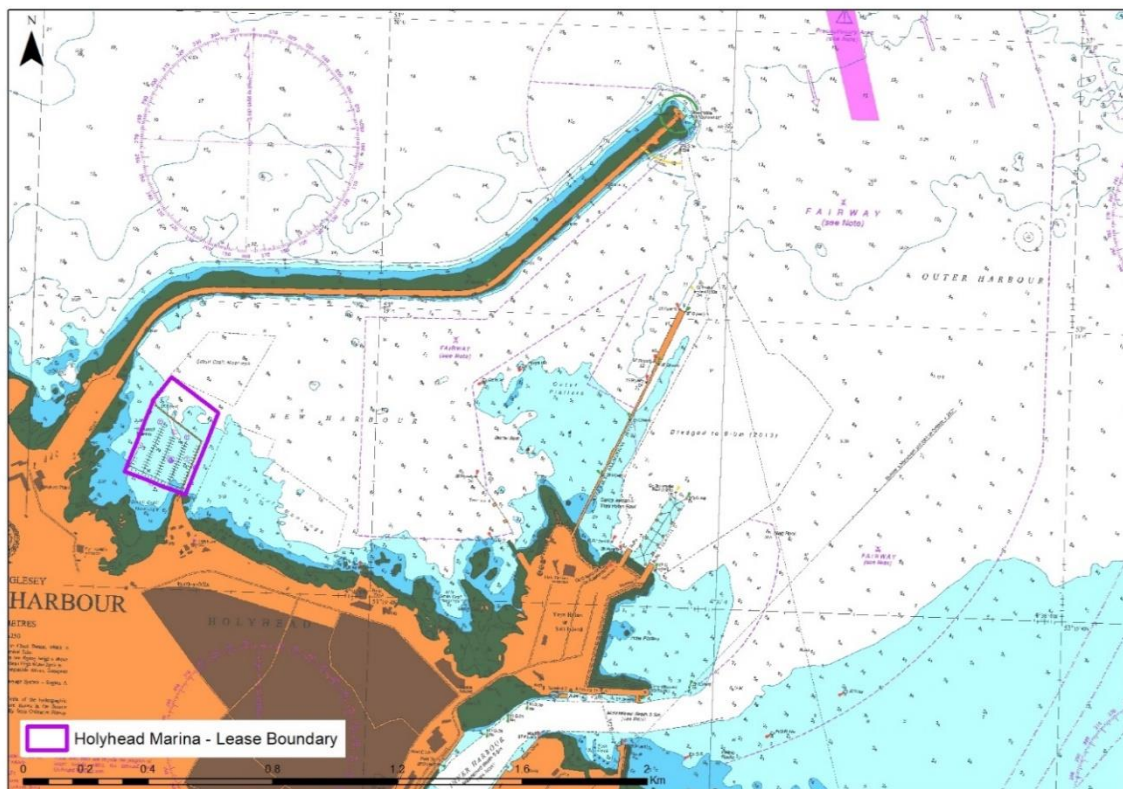


Figure 5-9 Holyhead Lease Area (Admiralty Chart)

Fetch / Bathymetry

The largest direct fetch for wind wave generation at the marina site is about 5.3 kilometres from the East to East North East direction to the adjoining coastline of Anglesey. However due to the shape of the main breakwater at Holyhead, storm wave energy from North East storms can enter the harbour and contribute to the wave energy approaching the marina site.

Holyhead Bay ranges in depth from shallow coastal and intertidal waters hugging the coast to an average depth of 25m depth on its westerly fringes. Seabed levels at the entrance to Holyhead Port are approximately 20m below chart datum (bCD) to the north near the Breakwater and less than 10m bCD surrounding Salt Island.

5.7.1.2 Storm Emma Analysis

RPS were commissioned to undertake a study of the storm wave conditions approaching the marina site during storm Emma. The study included the assessment of how extreme the storm was and its likelihood of re-occurrences. The preliminary design of the Holyhead Marina was based on the findings of this analysis. The full report has been included in Appendix D of this report.

5.7.2 Potential Environmental Effects

Potential impacts to coastal process during the operation phase of the proposed scheme include:

- Potential changes to the existing tidal regime particularly with regards to the Rubble Mound Breakwater.
- Potential changes to the existing inshore wave climate
- Potential changes to the sediment transport regime
- Potential increase in flood risk.

5.7.3 Proposed approach to the EIAR

The potential impact to coastal processes will be assessed using hydrodynamic numerical modelling software package developed by DHI, to address potential coastal processes issues. This will be achieved by developing a range of two dimensional and three dimensional numerical models to represent:

- the pre-project scenario; and
- the post-project scenario with the rubble mound breakwater works in place.

These models will be used to assess the construction and operational impacts of the Holyhead Marina Rebuild Project in the context of the following coastal processes

- The tidal regime;
- Sediment dynamics and the morphological response of the seabed within Holyhead Harbour;

- The inshore wave climate; and
- Flood risk to the surrounding areas.

The impact of the Holyhead marina on these coastal processes will be quantified by means of difference plots throughout this chapter, i.e. post-project minus pre-project conditions. As such, the extent and magnitude of potential impacts as a result of the Holyhead Marina will be identified and compared against baseline conditions.

5.7.4 Preliminary Mitigation Measures

Mitigation measures are proposed to reduce impacts, where appropriate. This will trigger a “with mitigation” assessment to be made of any residual impact as a result of the operational phases of the and/or in combination with other projects in the vicinity of the Holyhead Marina.

5.7.5 Summary of Scoping Exercise

The scoping exercise has concluded that due to the potential impacts to the coastal processes at operation stage, Coastal Process should be scoped in to EIAR.

5.8 Material Assets – Traffic & Transportation

5.8.1 Baseline Conditions

Holyhead is the second busiest Ro-Ro ferry port in the UK dealing with millions of tonnes of freight served by the A55 Expressway and the North Wales Coastline Railway. The port deals with some two million passengers, 400,000 cars and 10,000 coaches per year. The cruise liner business is expanding and there are plans to improve the inner harbour area east of Salt Island to improve cruise liner berthing.

Holyhead Marina is a consented and operating business with all its shore side infrastructure in place. The development was designed for a 500 berth marina with boatyard and support businesses, already established on the site. Car parking standards and sanitary amenities are designed under the relevant codes issued by the Yacht Harbour Association and British Marine. In the past operational traffic flows to and from the site has been managed based on demand during peak periods (i.e good weather, Bank Holidays, festivals and maritime events).

5.8.2 Potential Environmental Effects

Potential impacts to traffic and transport during the construction phase of the proposed scheme include:

- Temporary increase in road traffic as a result of the delivery of construction material as well as construction workers accessing and leaving the site.

It is unlikely that the re-build of the marina will have an impact on the traffic infrastructure during the operational phase of this project. However, other developments in the local area have the potential to have a cumulative impact.

5.8.3 Preliminary Mitigation Measures

The findings of the traffic impact assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts. Consideration will be given to the importation of stone by ship and transferring to dump barges for placement to mitigate against potential impacts on traffic.

5.8.4 Summary of Scoping Exercise

The scoping exercise has concluded that due to the potential increase in vehicle traffic at construction stage and operation stage, it is proposed that Traffic and Transportation should be scoped in to EIAR.

5.9 Archaeology & Cultural Heritage

5.9.1 Baseline Conditions

Listed Buildings

The Planning (Listed Buildings and Conservation Areas) Act 1990, as amended by the Historic Environment (Wales) Act 2016, establishes the legal basis for the designation, protection and management of listed buildings in Wales. The Welsh Ministers, acting through Cadw, compile lists of buildings of special architectural or historic interest. Listed building consent is required for works that affect the character of a listed building; unauthorised works constitute an offence. In addition, the 1990 Act gives powers to local authorities to take action to preserve deteriorating listed buildings.

Within 2.5Km of the Holyhead Marina Developments there are 61 Listed Buildings (The full list and summary of each is tabulated in Appendix E). Table 5-1 lists the 14 closest listed buildings to the Holyhead Marina Development. Of the 14 listed buildings there are three grade II* buildings and eleven grade two buildings (Figure 5-10). A summary of the grading is listed below, however, It is important to note all listed buildings are treated equally in the planning system regardless of grade.

- Grade I (one) — buildings of exceptional interest. These make up fewer than two per cent of the total number of listed buildings in Wales.
- Grade II* (two star) — particularly important buildings of more than special interest. These make up about seven per cent of the total number of listed buildings in Wales.
- Grade II (two) — buildings of special interest which justify every effort being made to preserve them. These make up approximately 91 per cent of the total number of listed buildings in Wales.



Figure 5-10 Listed Buildings located in close proximity to the Holyhead Marina Development

Table 5-1 Summary of listed buildings in close proximity to the Holyhead Marina Development

Name	Location	History	Exterior
Lighthouse on Holyhead Breakwater (Grade II) Record No. 5744	Maritime Structure set on ovoid platform forming the outer end of the long breakwater stretching into Holyhead Bay. Located approximately 1.90Km NE of the Holyhead Marina Development	The precise date of the lighthouse is unknown, though a publication of 1871 suggests that it was built in 1850 and if so, it may have been designed by J.M.Rendell who was the engineer who prepared the plans for the breakwater in 1845. Lighthouse has also been attributed to John Hawkshaw, the superintending engineer who completed the breakwater between 1857 and 1873.	Square, tapering 3-storey masonry tower 19.2m high and painted in black and white bands. Chamfered angles and stepped plinth. Raised surrounds to openings and matching recesses. Roll-moulding over ground floor; moulded cornice supports walkway around circular lantern. Lantern has latticework glazing and domed cap surmounted by weather vane and ball finial.
Holyhead Breakwater (Grade II*) Record No. 5743	Enormous Z-plan breakwater (2.4km long) stretches into Holyhead bay from Soldiers Point, NW of town centre. Approximately 0.70Km from Holyhead Marina Development	Work began 1848, declared complete August 1873 by Prince of Wales (later Edward VIII); cost £1,285,000. Plans prepared 1845 for the Treasury by James Meadows Rendell, engineer, of Westminster (previously employed on docks at Birkenhead, Great Grimsby and Leith). Works completed by John Hawkshaw, superintending engineer from 1857-73, John Dobson, resident engineer, G F Lyster, assistant	Breakwater starts with an extended and consolidated rocky headland of rubble fill with massive squared blocks to outer revetments. Masonry landing stage to harbour side. Narrower pier runs NW from junction at ashlar drum with rope-mould cornice; massive attached parapet. Broad elliptical string course to seaward side with rubble blocks below; raised walkway and protective wall with oversailing cornice. Cyclopean dressings to inset stairways (with stone barriers) flanked by concave refuges to lower deck; alternating masonry blockhouses with central arched openings. Occasional waisted bollards and

REPORT

Name	Location	History	Exterior
		engineer; contractors Messrs J & C Rigby, of London. Local quartz rubble from Holyhead mountain (over 7,000,000 tonnes) brought down by purpose-built broad gauge railway; upper parts built in Moelfre limestone. Originally a second breakwater to S was planned (beginning at Salt Island), but instead a major extension towards NE increased harbour area enclosed.	inset stairways to harbour edge of lower deck (formerly with tramway lines). Towards outer end is a modern masonry exedra facing harbour. Cyclopean steps flanked by screen wall with rope-moulded turret lead up to outermost platform with lighthouse and parapets. Outer ovoid platform was formerly a gun platform.
Porthyfelin House (Grade II) Record No. 14759	Domestic Dwelling Approximately 200m NW of junction of Porth-y-Felin Road and Beach Road with main front facing E (away from road). Approximately 0.45Km from Holyhead Marina Development	House of circa 1849, built by Mr Rigby, contractor of Holyhead breakwater for use of Mr Dobson, resident engineer of Holyhead breakwater. Originally known as 'Government House', used for some years as harbourmaster's residence.	Two storeys, U-plan, central block with rear wings to ends. Stucco, with band courses below eaves and at first floor; shallow-pitch slate roofs, low rectangular stucco chimney stacks. Originally glazed with small-pane hornless sash windows, some replacement of glazing bars. Central pedimented block has three small-pane sash windows to each floor; this is flanked by single window bays, small-pane sash to first floor, arched porches with Roman Doric columns to ground floor. Beyond this, to each side, semi-hexagonal bays with 3 small-pane sashes to each floor. To L., wing of four windows, glazed lean-to to R. Right wing has single window bay (with smaller inserted window on ground floor), advanced single window bay, paired windows, window to first floor, doorway to ground floor. To rear, wings enclose single-storey service block.
Trinity House Office (Grade II) Record No. 14730	Commercial Building: Located below Beach Road near sailing club; in walled enclosure. Approximately 0.35Km from Holyhead Marina Development	Part of depot built by Trinity House circa 1870 for maintenance of coastal lights.	Rendered walls (shallow plinth), pyramidal slate roof, 2 large chimneys. Two storey, 3 windows to front and rear (narrower central windows), 2 windows to sides. Windows mainly hornless sashes with 8 panes. Front (to NW) has gabled porch with side (L) entrance doorway, and small window to front. To NE, small yard links to outbuilding with monopitch roof.
Trinity Yard Large Workshop (Grade II) Record No. 14731	Commercial Building: Below Beach Road near sailing club; in walled enclosure. Approximately 0.35Km from Holyhead Marina Development	Part of depot built by Trinity House circa 1870 for maintenance of coastal lights.	Workshop; rendered walls (shallow plinth), asphalted roof with ridge light. Side elevations of 5 bays, segmental-headed blind panelling above small-pane windows with segmental heads. Gable ends had kneelers; to sea (NW) large camber-headed doorway flanked by windows; above blind panelling and central round window with gabled architrave. Gable end to land (SE) has segmental-headed panelling (round window to centre of gable), below this central doorway (made smaller) flanked by segmental-headed windows.
Trinity Yard Small Workshop (Grade II) Record No. 14732	Commercial Building: Located below Beach road near sailing club; in walled enclosure. Aligned SW-NE, to rear of large workshop, at right angles. Approximately 0.35Km from	Part of depot built by Trinity House circa 1870 for maintenance of coastal lights.	Single storey workshop. Rendered walls (shallow plinth), a slate roof with raised ridge vent; 2 tall chimneys to rear. Three camber-headed openings to front (NW), central camber-headed doorway flanked by small-pane windows

REPORT

Name	Location	History	Exterior
	Holyhead Marina Development		
Screen Wall to Soldier's Point House (Grade II) Record No. 14761	Domestic Dwelling To N and NW of Soldiers Point House. Approximately 0.40Km from Holyhead Marina Development	Elaborate castellated screen wall, circa 1849, house built for own use by Mr Rigby, contractor of Holyhead breakwater.	Dark local rubble with quartz banding and dressings to arrow loops; rustic, garden architecture type battlements. To N of house, on rocky outcrop, high octagonal tower, castellated, with white quartz band, machicolations, faces of octagon with cruciform loops outlined in white quartz, doorways with shallow arches. Wall steps down to E to low square tower with shallow arched doorway and continues to turret and then similar square tower. To E of this, wall turns slightly SE stepping down between round turrets, terminating in low square tower with shallow-arched doorways. To W of high octagonal tower, wall steps down to blocked gateway flanked by towers, continuing to pier where wall runs S to run down E side of lane in simpler style but with rustic crenellations between stone piers; gateway to rear yard of Soldier's Point House.
Soldier's Point House (Grade II) Record No. 14760	Domestic Dwelling: Close to landward end of great breakwater. In extensive grounds which include garden walls and ornaments in similar style to grand screen wall to N of house. Approximately 0.45Km from Holyhead Marina Development	Castellated house; circa 1849, built for own use by Mr Rigby, the contractor of Holyhead breakwater.	Two storeys; main part of house has stucco elevations, service block and outbuildings in exposed local rubble, slate roofs. Six bay entrance faces SE; corner towers; castellated parapet with shallow machicolations steps up at centre and between pairs of turrets over 2nd and 5th bays. Upper floor has 12-pane hornless sashes, ground floor generally mullioned windows. Second and fifth bays have single-storey castellated porches with corner turrets. Modern glazed veranda between porches. Left (SW) elevation obscured by modern two-storey extension but has corner towers and central pair of turrets. Right (NE) elevation of three windows elevation has corner towers and central pair of turrets. This side of building has exposed stone screen wall with tower s and turrets; broad arches to yard. Lower former service block also in exposed dark grey stone, 3 bays to front, end towers, paired turrets to centre; battlemented return to R has arrow loops in white quartz, and towers flanking former gateway, and links back to main curtain wall to N of house.
Zodiac Restaurant (Grade II) Record No. 14729	Commercial Building: On rocks below Beach Road NE of junction with Walthew Avenue. Approximately 0.70Km from Holyhead Marina Development	Former lifeboat house, circa 1850s, now converted to restaurant	Rubble with freestone dressings and copings (but mainly rendered and painted), slate roof. Aligned roughly N-S with gable and facing sea. Shaped gables (similar to Holyhead market hall) with ball finials; former broad doorways covered during conversion to restaurant (added bay window to N). Long shallow extension to W side; attached gabled range to NE. Some remains of slipway mechanism to seaward side.

REPORT

Name	Location	History	Exterior
Customs House (Grade II) Record No. 5771	Civil Building: Situating within the security zone of the Port of Holyhead, facing south across the inner harbour that is now the ferry terminal. Adjacent to Harbour Office. Approximately 1.30Km from Holyhead Marina Development	Built 1821 probably to the design of John Rennie, the widely renowned engineer who specialised in the design of bridges and harbours. Modern alterations and large extension to rear. In 1810 an Act of Parliament was passed which included much needed improvement to the harbour at Holyhead which had by that time become established as the principal port for communication with Ireland, in particular it was the station for the Post Office steam packets. This work involved the construction of the Admiralty Pier and lighthouse to the east of Salt Island and included the George IV Arch, Harbour-Master's Offices and Customs House.	Georgian, similar design to that of the Harbour Office. 2-storeys and built of local Mona marble stone; hipped slate roof and stone chimneys with modern caps. 3-bay front framed by prominent pilasters, sill band, plinth and a shaped cornice with blocking course above. Horned small pane sash windows (modern replacements) and blocked central entrance, now with window inserted. Pebbledash right hand end with adjoining rubble wall linking Customs House with Harbour Office. Brick chimney and lean-to at rear and large flat roof modern extension to left with horned small-pane sashes; this range projects at left end and includes present main entrance. Replacement customs offices have been built detached to rear. Interior altered in office conversion and renovation.
Harbour Office (Grade II*) Record No. 5772	Maritime Building: Situating within the security zone of the Port of Holyhead, facing south across the inner harbour that is now the ferry terminal. Adjacent to Customs House. Approximately 1.30Km from Holyhead Marina Development	Built 1821 probably to the design of John Rennie, the widely renowned engineer who specialised in the design of bridges and harbours. Modern alterations and large extension to rear. In 1810 an Act of Parliament was passed which included much needed improvement to the harbour at Holyhead which had by that time become established as the principal port for communication with Ireland, in particular it was the station for the Post Office steam packets. This work involved the construction of the Admiralty Pier and lighthouse to the east of Salt Island and included the George IV Arch, Harbour-Master's Offices and Customs House	Georgian, similar design to that of the Customs House. 2-storeys and built of local Mona marble stone; hipped slate roof. Broad 3-bay front framed by prominent pilasters, sill band, plinth, and a shaped cornice with blocking course above. The design is dominated by the large square clock tower which carries a substantial octagonal belfry; this also has pilasters and has a swept cap with ball finial. Clock face to front and roundels to other sides, that to left is small-pane glazed; moulded surrounds except to rear. Horned small pane sash windows; central entrance. Pebbledash fronted lean-to at left. Blank rear with alterations; hipped roof cross range.
George IV Arch (Grade II*) Record No. 5773	Commemorative Structure: Situated within the security zone of the Port of Holyhead, to the east of the Harbour Office and Customs House and facing the end of the Admiralty Pier. Approximately 1.40Km from Holyhead Marina Development	Built 1822-24 by Thomas Harrison (1744-1829), architect of Chester. Commemorates George IV's landing at Holyhead on 7th August 1821 en route for Ireland; the royal yacht was delayed by bad weather and eventually the King had to travel on the new post-office steam packet, a decision that earned him popularity. Public subscription paid for this monument and it was inserted into the 1821 scheme designed by the renowned engineer John Rennie; this resulted from an Act of Parliament to improve the harbour and it included Admiralty Pier, Harbour Office and Customs House. In 1821 Harrison apparently told C R Cockerell that he had first proposed an Egyptian design which he felt was "better conceived".	Doric structure in the form of a gateway, although traditionally it is known as the Triumphal Arch. It reflects Harrison's interest in Greek architecture (eg. he made many drawings based on the Propylea of the Athenian Acropolis); the unfluted columns however are not true Greek Doric. It is built of Mona marble from Red Wharf quarry and comprises two pairs of columns set between antae, forming a central cobbled carriage-way flanked by narrower footways. Other Classical detail includes Doric cornice and frieze with guttae and mutules. The frieze is broken on both sides by inscribed panels in Welsh facing the town and Latin facing the pier. George IV's visit to Edinburgh the following year coincided with the laying of the foundation stone of a grander Greek Revival monument, the National Monument on Calton Hill.

REPORT

Name	Location	History	Exterior
Admiralty Pier (Grade II) Record No. 14757	Maritime Structure located at NE end of Victoria Road, projecting E into harbour. Approximately 1.60Km from Holyhead Marina Development	In 1810 an Act of Parliament was passed which included much needed improvement to the harbour at Holyhead which had by that time become established as the principal port for communication with Ireland, in particular it was the station for the Post Office steam packets. This work involved the construction of the Admiralty Pier and lighthouse to the east of Salt Island and Harbour-Master's Offices and Customs House, with later addition of the George IV Arch.	In 1810 an Act of Parliament was passed which included much needed improvement to the harbour at Holyhead which had by that time become established as the principal port for communication with Ireland, in particular it was the station for the Post Office steam packets. This work involved the construction of the Admiralty Pier and lighthouse to the east of Salt Island and Harbour-Master's Offices and Customs House, with later addition of the George IV Arch.
Lighthouse on Admiralty Pier (Grade II) Record No. 14759	Maritime Structure located the E end of Admiralty Pier. Approximately 1.70Km from Holyhead Marina Development	Built 1821, by John Rennie (1761-1821), prominent engineer. In 1810 an Act of Parliament was passed which included much-needed improvement to the harbour at Holyhead which had by that time become established as the principal port of communication with Ireland; in particular it was the station for the Post Office steam packets. This work involved the construction of the Admiralty Pier and lighthouse to the east of Salt Island, and Harbour Master's Offices and Customs House, with the later addition of the George IV Arch.	Lighthouse, approximately 14.6m high. Three storey tapering ashlar masonry tower (windows covered at time of inspection). Lantern is the second oldest in Wales after the Point of Ayr lighthouse, and has 3 tiers of square panes, and copper roof with finial. Gallery with bellied iron railings, carried on moulded cornice of tower.

Conservation Areas

A conservation area is an “Area of Special Architectural or Historic Interest”, the character or appearance of which it is desirable to preserve or enhance. Conservations area are designated by local planning authorities under Section 69 of the Planning 1990 Act. Designating a Conservation area does not prevent future change to buildings and their surroundings. It does mean, however, that the local planning authority when considering planning applications, including those which are outside a Conservation area but would affect its setting, must pay special regard to whether the proposed changes “preserve or enhance the character or appearance of the Conservation area”.

The designation should enable the character of the area to be retained and controlled, ensuring that any new development is sympathetic to both the special architectural and historic interest of the area, but without affecting its function or prosperity.

There are three Conservation Areas located within 1.5km of the Holyhead Marina Development (Figure 5-11): Holyhead Beach, Holyhead Central and Holyhead Mountain Village. A summary of each designated conservation area is listed below:

- Holyhead Beach – Holyhead Beach Conservation area was designated in June 1971. Holyhead Beach and most of Newry Beach evolved from agricultural land to an enclosed working area established

during the construction period of the Great Breakwater. Later after completion of the Breakwater the central area was transformed by the construction of a two tier promenade and landscaping to create a vast green public open space that even today is used for functions. The unique character and history of the imposing buildings and rugged landscape to the west, the vast public open space to the centre, and the more urban 19th century development to the east are all considered worthy of protection and enhancement

- Holyhead Central - Holyhead Central Conservation area was originally designated on 24th June 1971 and concentrated around the old Roman Fort of St Cybi. The area was extended in July 1991 to include the core of the 19th century expansion of the town. The majority of the area was developed in a period of rapid expansion of the town in the mid 19th century and has a uniformity and integrity of character and scale. Whilst several of the buildings are individually listed it is the overall streetscape that makes the major contribution to the qualities of the area and therefore is considered worthy of protection and enhancement
- Holyhead Mountain Village - The majority of the present Mountain Village was built between 1848 and 1850 to provide housing for the work force employed in the construction of Holyhead Breakwater. It was, at the time, one of four Holyhead Mountain villages each linked by footpaths and narrow lanes provided for cart traffic. A system of enclosures evolved where householders were allowed to build a stone wall enclosing a piece of land. The enclosures and quarry village are unique to this part of Anglesey. Most of the village has retained its character with the enclosures, together with connecting winding lanes, presenting a strong pattern. In view of the village's social history and its unique built environment it is considered that the village's character is worthy of protection and enhancement.

Maritime Assists

The seas around Wales are littered with the wrecks of vessels of all shapes and sizes. The Term 'Wreck' is used to describe something which has been lost at sea. A 'Wreck' can be something which fell overboard, something which was thrown overboard to lighten the ship, or a piece of the ship itself. Although all of them have historic value, only six currently have legal protection.

These six are known as 'designated wrecks' and are protected under the 1973 Protection of Wrecks Act. The closest designated wreck site to the Holyhead Marina Development is the Royal Yacht Mary which is located off the Skerries Island (<11km).

As shown in Figure 5-12, there are numerous Maritime Heritage Assets in close proximity to the Holyhead Marina Development.

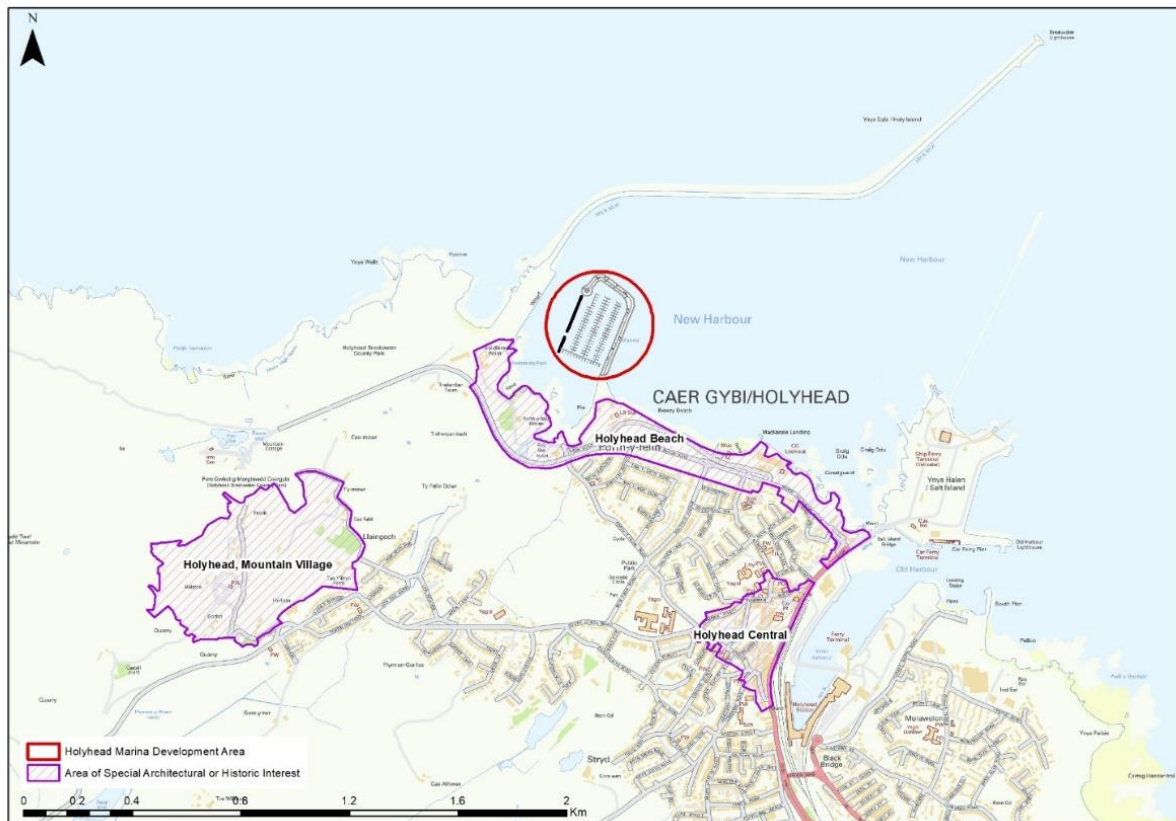


Figure 5-11 Designated Conservation Areas

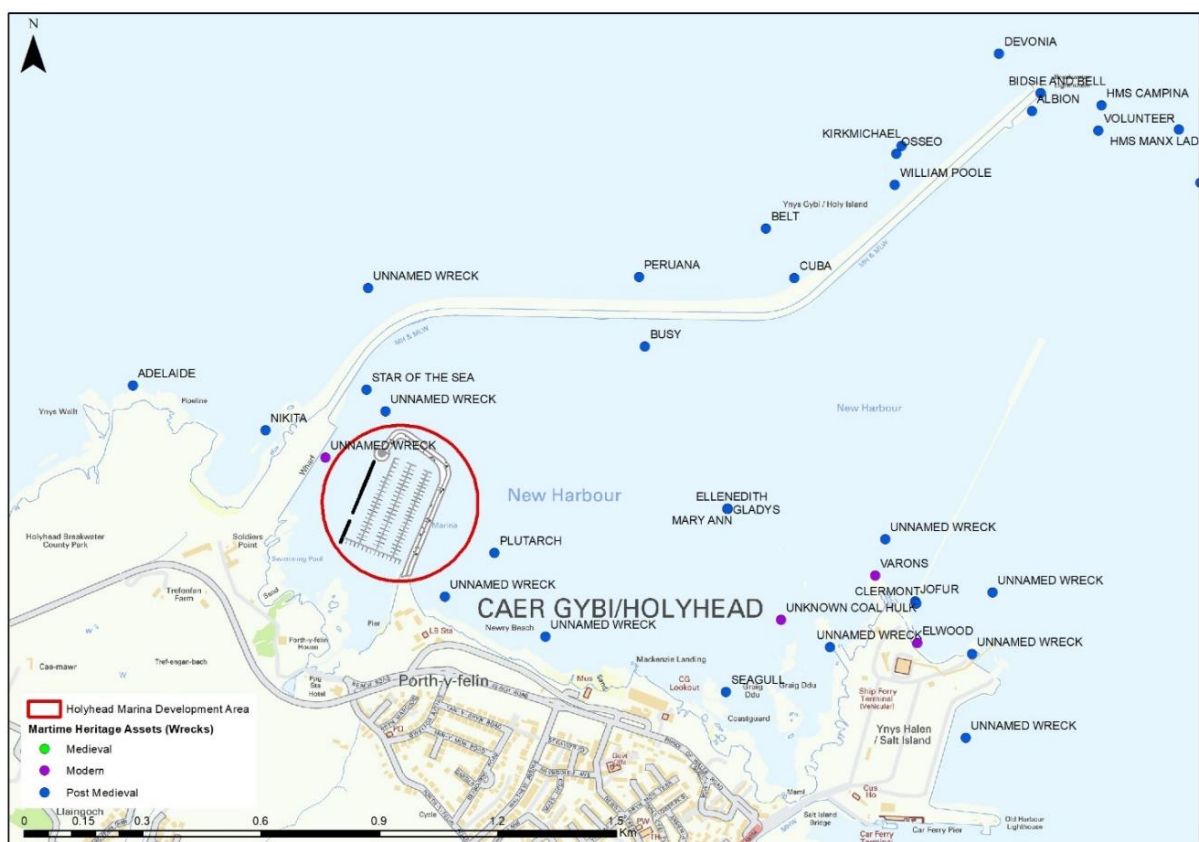


Figure 5-12 Maritime Heritage Assets (Wrecks)

5.9.2 Potential Environmental Effects

Potential impacts to Archaeology during the construction phase of the proposed scheme include:

- Potential impact on the Holyhead Conservation Area and listed building in close proximity to the Holyhead Marina.
- The potential for impacts on as yet unidentified archaeological remains, in particular wrecks and archaeological deposits within the marine environment.

5.9.3 Proposed approach to the EIAR

A Cultural Heritage Impact Assessment will be undertaken as part of the EIAR. This will include a desk-based assessment of all available historic information including a review of existing cartographic sources. With regards to marine archaeology, dive surveys and/or seabed geophysical surveys of the area to be impacted by the rubble breakwater may also be undertaken.

5.9.4 Preliminary Mitigation Measures

The findings of the cultural heritage impact assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts.

5.9.5 Summary of Scoping Exercise

The scoping exercise has concluded that due to the historic nature of the Holyhead Harbour combined with the potential to damage unrecorded wreck sites during construction, Archaeology & Cultural Heritage should be scoped in to EIAR.

5.10 Landscape & Visual

5.10.1 Baseline Conditions

5.10.1.1 The Anglesey Area of Outstanding Natural Beauty (AONB)

An area of outstanding natural beauty (AONB) is land protected by the Countryside and Rights of Way Act 2000 (CROW Act). AONBs are areas designated for the purpose of conserving and enhancing their natural beauty. This includes landform and geology, plants and animals, landscape features and the rich history of human settlement over the centuries.

The approximate coverage of the Anglesey Area of Outstanding Natural Beauty (AONB) is 211km², covering one third of the island. As illustrated in Figure 5-13, the Anglesey AONB is predominately a coastal designation and covers the majority of Holy Island. The designation reaches the cliffs close to the western edge of the beginning of the breakwater and covers the majority of the west coast of Holy Island. The main features are; low cliffs alternating with coves and pebble beaches; sheer limestone cliffs interspersed with fine sandy

beaches; and, stretches of sand dunes with beaches (Isle of Anglesey County Council, 2016). The closest point of the AONB site is approximately 1.2km southwest of the Holyhead Marina Rebuild Project.

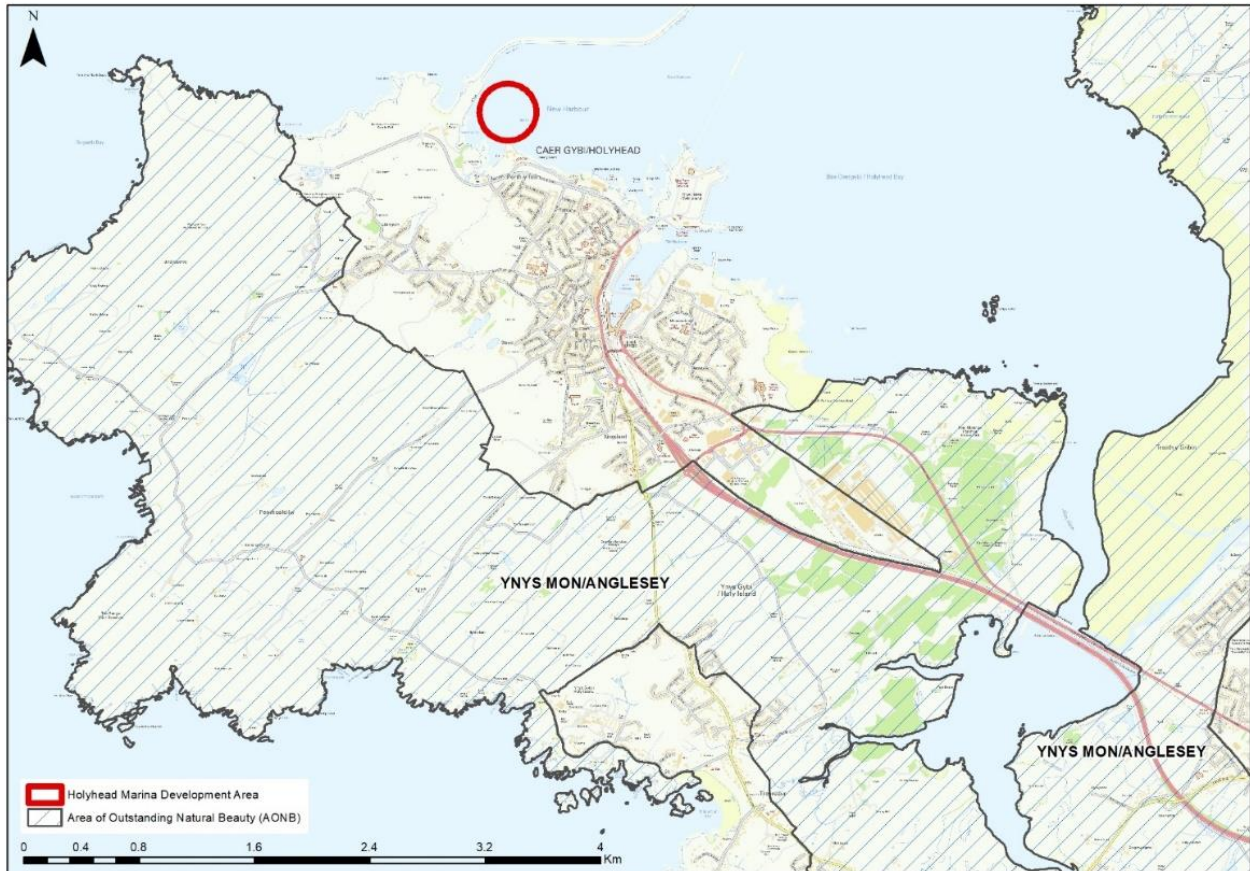


Figure 5-13 Designated Areas of Outstanding Natural Beauty

5.10.1.2 Landscape and Seascape

The west coast of Anglesey has views of uninterrupted open sea, with a scenic coastal area consisting of hard rocky cliffs and headlands interspersed with bays and insets with headlands providing views to undeveloped areas of sea.

A seascape assessment undertaken for the Isle of Anglesey Council in 2013 identified 36 Seascape Character Areas (SCA), one of which is relevant to the Holyhead Marina Rebuild Project. Holyhead (SCA 11). This area is characterised by a high level of development (Holyhead) and the influence of Holyhead Port. Views are dominated by long breakwaters, commercial shipping, cranes and smaller vessels. The landscape is settled and busy and at nights it is a well-lit environment. Holyhead Mountain rises above the town providing a rocky profile with heather cover which contrasts with the built environment of the town and port.

5.10.2 Potential Environmental Effects

Potential impacts to Landscape & Visual during the construction and operation phase of the proposed scheme include:

- Construction Phase Impacts including site preparation and enabling works, Site Infrastructure, vehicular and plant movements and dust emissions.

- Potential Impacts to Landscape and Seascape Character Areas during construction and operation.
- Potential Visual impacts of Marina Lighting on local resident/biodiversity during construction and operation.

5.10.3 Proposed approach to the EIAR

The most significant feature of the Holyhead Marina Rebuilt Project will be the new rubble breakwater. Given the proximity of the Anglesey Area of Outstanding Natural Beauty (“AONB”) and local conservation areas of scenic importance. A Landscape and Visual Impact Assessment will be undertaken as part of the EIAR to understand the proposed scheme’s potential impact on the area’s visual setting.

The methodology for the LVIA will be derived from *Guidelines for Landscape and Visual Impact Assessment*, Third Edition (The Landscape Institute and Institute of Environmental Management & Assessment, 2013) (GLVIA3).

There is also the potential for impacts caused by marina lighting during night time hours. These potential impacts will be assessed as part of the EIAR.

5.10.4 Preliminary Mitigation Measures

The findings of the landscape and visual impact assessment will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts.

5.10.5 Summary of Scoping Exercise

The scoping exercise has concluded that due to the proximity of the Anglesey Area of Outstanding Natural Beauty (“AONB”) and local conservation areas, it is recommended that a Landscape and Visual Impact Assessment is undertaken in order to understand the proposed scheme’s potential impact on the area’s visual setting.

5.11 Waste

5.11.1 Baseline Conditions

Waste management at the Holyhead Harbour is currently operated to best practice guidance and in accordance with Holyhead Port Waste Management Plan. All customers are required to comply with the terms of the standard form of berthing licence/storage ashore agreement issued by the Yacht Harbour Association. The marina issues an environmental code of conduct/policy in the marina handbook and displays guidance on notice boards relating to waste management and environmental protection. Compliance with the harbour byelaws and environmental guidance are a condition of the berthing licence agreements. The marina actively promotes the Green Blue environmental code of conduct and the individual Blue Flag campaign for vessels.

Holyhead Marina already has substantial infrastructure in place including a fuel and waste compound. The Waste Management Compound is a screened compound with a concrete apron set to falls to gullies in and adjacent to the compound. All surface water runs to gullies and into the storm water drainage system which also collects surface run off from the car parks and surrounding buildings. There is an alarmed interceptor immediately prior to the consented storm water outfall which is in a concrete headwall and apron built above high water in the rock armour revetment. There is a steel flap valve on the outfall pipe. Excess oil in the interceptor is monitored by a sensor in the chamber which sets off an audible and visual alarm in the marina control building. The waste management compound also contains the waste oil tank, diesel storage tank, battery bins, filter bins, general waste skips, oil filter bins, re-cycling skips and trolleys. There is also a gas bottle safe cage and 2 spill kits. Details of each are provided below:

- **General Waste:** A general waste skip is provided in the waste management compound. This is supplied and controlled by a local licensed waste management contractor. During the Summer, one 16 cubic metre covered skip is used per week for general waste from vessels on the marina and in the yard. In the winter one of these skips will be filled every 2-3 weeks. Customers are encouraged to re-cycle and separate their waste. Notices on the skip control the type of waste allowed in the skip and this strictly excludes toxic substances, paints, oils, batteries and the like. The skip is covered and has hinged doors to prevent seagulls gaining access. Wheeled bins and fixed litter bins are located around the shore side development and throughout the yard. There are approximately 10 fixed litter bins and 10 mobile bins around the boatyard. These are managed by the boatyard staff and emptied into the general waste skip as required.
- **Recycling:** The Anglesey County Council provide a compartmented re-cycling skip in the marina's waste management compound for glass bottles, tins and waste paper. In the summer period this skip will be filled in approximately 2 months and is emptied by the County Council's waste management department. Notices and the marina handbook encourage all berth holders to separate their waste into the recycling compartments.
- **International Catering Waste:** A locked and clearly signed wheeled bin is provided specifically for catering waste from vessels arriving from outside the EU in accordance with DEFRA requirements. This is rarely needed but systems are in place to have this waste treated as highly hazardous under the Animal By-products Regulations and the waste will be collected stored and disposed of at the local licensed waste disposal facility when required.
- **Sewage:** Berth holders are forbidden to discharge sea toilets in the marina. There is an extensive and well equipped shower block in the marina control building accessible 24 hours a day. Sewage from the site (and the RNLI and Sailing Club) is conveyed via underground drains to a communal adoptable standard sewage pumping station located adjacent to the boatyard. There is a rising main below the boatyard connecting to the main town sewer in Beach Road. There is no sewage pump out facility for vessels at the marina and there is no facility for chemical toilet disposal. These facilities are very rarely demanded by the existing customer base and on those rare occasions when a pump out facility may be required arrangements can be put in place to bring vessels alongside the boatyard jetty at high water and bring in licensed contractors with the appropriate fittings for disposal by road tanker.

- **Oil / Contaminated Fuel:** A purpose made 110% bunded steel waste oil tank is located in the waste management compound. The tank is double skinned and has a capacity of 2500 litres. This tank is purpose made for receiving waste oil and has a step for ease of access to the hinged weather tight hatch with heavy duty mesh strainer. The inner tank is fully baffled and pressure tested. The tank has fork lift pockets and lifting eyes for easy lifting/moving but is located within easy reach of the waste oil tanker. Signage directs customers as to the use of the tank. A fully equipped spill kit with absorbent pads, bags and matting is located adjacent to the tank. The tank is emptied by licensed contractors as required. The licensed contractors are Oil Salvage Ltd of Liverpool who issue a consignment note and dispose of the oil in accordance with their licence conditions.
- **Oil Filters / Oily Rags:** Blue wheeled bins for oil filters and oily rags are provided. This bin is located adjacent to the waste oil tank and is emptied on request by the licensed contractors.
- **Diesel Storage & Fuel Pontoon:** A 15,000 litre integrally bunded double skinned steel storage tank is located in the waste management compound on a concrete base. This is an RNLI specification tank by Taylor Fuel Control, fully alarmed and supplied with all appropriate controls, valves and a spill kit. The tank is designed for full secondary containment. The tank is further protected against mechanical damage by galvanized steel crash barriers within the waste management compound. Feed pipes run below ground to the bridge head and thence below the bridge and in purpose made ducts in the floating pontoon to the fuel pontoon adjacent to the lifeboat pen. Feed pipes are double skinned with air pressure monitoring for leakage. There is an appropriate check valve in the feed line adjacent to the fuel pump. This automatically shuts off when the delivery pumps are not in use. The tank is managed by both the RNLI and the marina. Procedures are in place to monitor, record and log all deliveries and re-fills. Holyhead Marina is a Registered Dealer in Controlled Fuel Oils and submits returns to HM Customs and Excise. The fuel pontoon is purpose made with an integral oil interceptor built into the concrete pontoon. This is a four chamber separator which collects rainwater and any small diesel spillages from a grid and drip tray around the fuel pumps. This drip tray is also used to place cans for filling with diesel. The interceptor is monitored and emptied by hand pump when full and the oily water disposed of in the waste oil tank.
- **The fuel pump** is a twin delivery standard forecourt pump bolted down to the concrete pontoon in the centre of the drip tray grid. The pump is regularly serviced by Roncal Ltd – the original suppliers of the pump. The pump is also occasionally checked and sealed by the local Weights and Measures officer. Safety and emergency procedures notices are fixed to the casing of the pump. The delivery hoses are extra long for reaching offside fillers on vessels of various sizes. The delivery nozzles have automatic cut off to prevent spillage when fuel rises in the filler pipes of vessels. Nozzle triggers cannot be locked and must be continuously held during the delivery of fuel.
- **Spill Kits and Emergency Procedures:** There is a fully equipped spill kit on the fuel pontoon and there are two fully equipped spill kits in the waste management compound. Additionally the marina control office has a “mobile” emergency fuel spillage kit containing absorbent pads and mats. There is also a large oil boom stored adjacent to the marina control office for large spillages. The fuel pontoon is

located in an area of the marina which can be quickly boomed off and isolated in the event of spillage. The marina safety boat and launch are berthed immediately adjacent to the fuel pontoon.

- **Scrap Steel and Metals:** The boatyard does generate a modest amount of scrap steel and metal. Customers are advised to consult boatyard staff regarding the placement of scrap metal in a safe area of the yard for collection by scrap metal contractors for appropriate disposal.
- **Wash down, Paint Particles and Anti-foul:** The boatyard is currently engaged in the design of a wash down area for boats on the hard. This will allow the waste water containing paint or anti-foul particles to be filtered or separated and water to be re-cycled to avoid waste. The current yard policy is to wash down away from the waters edge allowing the gravel yard to act as the filter and avoiding direct discharge into the sea. Paint particles and scrapings are collected for disposal. The environmental codes guide customers towards best practice in the removal of paint and anti-foul. Grit or sand blasting is strictly forbidden without a full method statement by an approved contractor including the management of waste, noise and airborne particles. This is generally discouraged and customers are advised to collect paint particles and scrapings for disposal via the waste management compound by licensed waste management contractors.

5.11.2 Potential Environmental Effects

Potential impacts to Waste during the construction phase of the proposed scheme will arise from the construction of the offshore breakwater. At this preliminary stage it is proposed that the stone used to construct the rubble mound breakwater will be locally sourced quarried stone.

As the proposed redevelopment is located within the existing Holyhead Harbour and any vessels using the redeveloped pier will continue to follow the harbours waste management procedures. Therefore the operational stage waste assessment is scoped out.

5.11.3 Proposed approach to the EIAR

A qualitative assessment of potential effects in relation to waste will be undertaken as part of the EIAR. The assessment will comprise of the following stages:

- Assessment of waste related terms and definitions applicable to the Holyhead Marina Rebuild Project;
- A review of applicable legislation and policy;
- A review of the Holyhead Marina Project design, undertaken in consultation with the project design team, to estimate the waste generation during the various phases;
- Consideration of potential interactions between proposals and the current site conditions, and identification of possible impacts;
- Assessment of impacts, within the context of the receiving waste management environment;
- Identification of measures and solutions to avoid, minimise or mitigate potential impacts; and

- Assessment of residual impacts, taking account of mitigation measures.

5.11.4 Preliminary Mitigation Measures

In relation to construction related waste, proposed preliminary measures will include the development of a draft CEMP. The CEMP will include a Site Waste Management Plan (SWMP) to manage all waste materials generated on site. The CEMP will contain site specific environmental measures and procedures for the management of waste and related pollution control measures.

A site specific pre-construction SWMP will be also prepared by the appointed contractor and form a component part of the CEMP to ensure effective waste management and recycling of waste generated during the works. The SWMP will be prepared in line with the waste management hierarchy with waste reduction and re-use on site being of primary focus. The SWMP will be completed by the appointed contractor, and implemented prior to construction works. The appointed contractors for the site preparation, earthworks and construction phases of the works will be contractually obliged to follow the SWMP and all relevant legislation.

5.11.5 Summary of Scoping Exercise

The scoping exercise has concluded that the potential effects of waste arising during the construction stage should be scoped into EIAR.

The Holyhead Marina when operational will once again fall under the Holyhead Port Waste Management Plan, therefore it is recommended that Waste during the operation stage is scoped out of the EIAR.

5.12 Population, Human Health & Socio Economics

5.12.1 Baseline Conditions

The information in this section is largely informed by data provided through the 2011 Census (Office for National Statistics). The tables below reference data specific to Holyhead Town for comparison against the Wales National Average.

5.12.1.1 Population

The population of Holyhead Town in 2011 was 1,203. The number of households was 579 with an average of 2.1 persons per household. Population Density in 2011 was 47.1 person/hectare. Table 5-2 below shows the age distribution statistics based on the 2011 census data. The average age of the residents of Holyhead Town is younger than the national average.

Table 5-2 Age Distribution Statistics (Census 2011)

Age	Holyhead Town	Wales
Age 0 to 4	7.81%	5.8%
Age 5 to 9	5.07%	5.3%
Age 10 to 14	5.99%	5.8%

Age	Holyhead Town	Wales
Age 15 to 17	3.16%	3.7%
Age 18 to 24	12.55%	9.7%
Age 25 to 29	5.99%	6.1%
Age 30 to 44	21.86%	18.6%
Age 45 to 59	18.62%	19.9%
Age 60 to 64	6.23%	6.7%
Age 65 to 74	8.56%	9.8%
Age 75 to 84	3.49%	6.1%
Age 85 and over	0.67%	2.4%
Mean Age	36.84	40.6
Median Age	37	41

5.12.1.2 Human Health

With regards to Human Health, the respondents of the 2011 Census were asked to rate their health. Table 5-3 shows the results. The percentage of residents in Holyhead rating their health as 'very good' is marginally higher than the national average. The percentage of residents in Holyhead rating their health as 'very bad' is less than the national average. This suggests that the health of the residents of Holyhead is generally better than in the average person in Wales.

Table 5-3 General Health Statistics for Holyhead Town (2011 Census)

Health	Holyhead Town	Wales
Very Good	46.97%	46.64%
Good	31.01%	31.12%
Fair	16.13%	14.62%
Bad	4.66%	5.82%
Very Bad	1.25%	1.81%

5.12.1.3 Socio Economics

Employment Statistics are shown in Tables 5-4. These statistics can often be a good indicator of the prosperity of the town and possible indicator of how hard it would be to get employment in the area. In 2011, the rate of unemployment in Holyhead is higher than the national average, suggesting that finding a job in this area may be hard.

The Census 2011 data highlights that the highest level of qualification of residents aged 16 and over, for Holyhead and Wales. As shown in Table 5-4, 28.6% of residents had no qualifications which is higher than the national average of 25.9%. It is also shown that only 11.3% of the residents of Holyhead have Level 4 Qualifications and above which is half on the national average of Wales (24.5%).

Table 5-4 Holyhead Employment Statistics (Census 2011)

Benefit	Holyhead Town	Wales
Economically active: Employee: Part-time	15.85%	13.94%
Economically active: Employee: Full-time	32.57%	35.60%
Economically active: Self-employed	5.90%	8.64%
Economically active: Unemployed	11.91%	4.31%
Economically active: Full-time student	2.84%	3.28%
Economically inactive: Retired	12.79%	16.10%
Economically inactive: Student (including full-time students)	4.26%	5.96%
Economically inactive: Looking after home or family	2.84%	3.85%
Economically inactive: Long-term sick or disabled	7.76%	6.27%
Economically inactive: Other	3.28%	2.04%
Unemployed: Age 16 to 24	3.50%	1.37%
Unemployed: Age 50 to 74	2.30%	0.75%
Unemployed: Never worked	1.09%	0.67%
Long-term unemployed	6.01%	1.71%

Table 5-5 Highest level of qualification (Census 2011)

All categories:	Holyhead Town	Wales
No qualifications	28.6%	25.9%
Level 1 qualifications	19.8%	13.3%
Level 2 qualifications	18.1%	15.7%
Apprenticeship	4.1%	3.9%
Level 3 qualifications	12.4%	12.3%
Level 4 qualifications and above	11.3%	24.5%
Other qualifications	5.6%	4.3%

Table 5-6 provides information that classifies usual residents aged 16 to 74 in employment the week before the census by the industry in which they work. The top 5 industries of employment within Wales and Holyhead Town are: Wholesale and retail trade; Human health and social work activities; Accommodation and food service activities; Transport and storage and Manufacturing.

Table 5-6 Employment Sectors (Census 2011)

Industry	Holyhead Town	Wales
A Agriculture, forestry and fishing	1.56%	1.72%
B Mining and quarrying	0%	0.23%
C Manufacturing	8.20%	10.54%
D Electricity, gas, steam and air conditioning supply	0.78%	0.80%
E Water supply; sewerage, waste management and remediation activities	0.39%	0.91%
F Construction	7.23%	8.16%
G Wholesale and retail trade; repair of motor vehicles and motor cycles	19.14%	15.59%
H Transport and storage	10.74%	3.90%
I Accommodation and food service activities	12.30%	6.23%
J Information and communication	0.59%	2.27%
K Financial and insurance activities	1.37%	3.05%
L Real estate activities	0.98%	1.25%
M Professional, scientific and technical activities	1.17%	4.30%
N Administrative and support service activities	6.84%	3.99%
O Public administration and defence; compulsory social security	5.66%	7.93%
P Education	3.71%	10.11%
Q Human health and social work activities	13.28%	14.46%
R, S, T, U Other	6.05%	4.55%

5.12.2 Potential Environmental Effects

Potential impacts to Population, Human Health and Socio-Economics during the construction and operation phase of the proposed scheme include:

- Potential effects of the Holyhead Marina Rebuild Project on human health from changes in emissions to air quality and noise exposure.
- Potential effects of the Holyhead Marina Rebuild Project on population and socio-economic factors (Population Employment). The Project has the potential to create jobs for local residents during construction phase. The project may also result in the possible migration of workers to the area during the construction phase which will have a positive impact on the accommodation and food service industry in Holyhead Town.

5.12.3 Proposed approach to the EIAR

Impacts upon population and human health will be assessed within the relevant chapters elsewhere within the EIAR including air quality, noise and vibration, transportation and water quality. Population and Human Health are therefore scoped out of the EIAR.

There is a general recognition of the economic importance of the Holyhead marina. The loss of the marina has had already had a negative impact on the Holyhead Economy. As the Holyhead Marina is already an established business and the project is likely to only have positive impacts on the local economy it is proposed that Socio Economics is also scoped out of the EIAR

5.12.4 Preliminary Mitigation Measures

The findings of the air quality, transport and noise & vibration, biodiversity and water quality impact assessments will be used to develop relevant mitigation measures as appropriate for the operation and construction phases of the development to mitigate any significant adverse impacts on population, human health.

5.12.5 Summary of Scoping Exercise

The scoping exercise has concluded that the potential impacts of the Holyhead Marina Rebuild Project on human health will be primarily assessed within the relevant chapters elsewhere within the EIAR including air quality, noise and vibration, transportation, biodiversity and water quality.

It is thought that the Holyhead Rebuild Project will only have a positive impact on the population and socio economics during the construction stage of the project through the creation of local jobs, potential migration of workers. This will have a positive impact to the local economy particularly to the local accommodation and food service industry.

It is therefore proposed that Population, Human Health and Socio-Economics is scoped out of the EIAR and be assessed through the specialist topics of Air, Noise and Vibration, Traffic & Transportation and water quality instead.

5.13 Major Disasters & Accidents

5.13.1 Baseline Conditions

The receiving environment is within an existing operational port. The Holyhead Marina Rebuild Project seeks to improve the port facilities by rebuilding the Holyhead marina and protecting the new marina against future storm surge events. There will be no fundamental changes to the types of operations currently undertaken within the harbour.

The current Holyhead Port operations consist of a wide range of services across sectors including: cruise and ferry passengers, fishing and yachting as well as boat construction and turbine transfers. In addition to port

infrastructure, there are a number of other land uses / operations within the marine, including cafes and restaurants, RNLI lifeboat station and other yacht and fishing related commercial operations.

Port operations and procedures are overseen by Stena Line Ports Ltd (SLPL) which are implemented in line with a range of control measures throughout the port, to include (inter alia): Environmental Policy, Marine Safety Management System, Port Navigation and Pilotage, Health and Safety Policy, Harbour Byelaws and Oil Spill Contingency Plan. SLPL implement appropriate control measures across the harbour estate for all operations, extending to both SLPL procedures and those of vessels and users of the harbour.

5.13.2 Potential Environmental Effects

Impact upon the natural environment, local land uses and human population, caused by accidental discharge of dangerous substances (oils, fuels, cement, paints, contaminants etc) could occur during the construction phase but these are addressed on other chapters in the EIAR including Water Quality and Soils, Geology and Contamination and don't merit a Major Accidents and Disasters chapter and is scoped out.

Similarly operational impacts may also occur through accidental discharge of dangerous substances (during servicing and refuelling of vessels, leaks and spillages) but these matters will be addressed elsewhere within the EIAR (water quality and soils, geology and contamination) and will not therefore be covered within the scope of the major disasters and accidents assessment chapter and is scoped out.

The presence, movement and navigation of vessels during both construction and operational phases, has the potential to result in accidents; collision with other vessels or with natural and / or manmade features, may result in damage to the environment through accidental discharge of sensitive substances such as fuels and cargo materials. However, the existing navigational systems and controls in the harbour will be adhered to and remain in place during and post construction. The movement and navigation of vessels will be described in the Project Description of the EIAR and the need for major disasters and accidents chapter is scoped out.

5.13.3 Proposed approach to the EIAR.

It is proposed that Major Disasters and Accidents is scoped out of the EIAR.

5.13.4 Preliminary Mitigation Measures

All construction phase operations should be undertaken in line with appropriate safeguarding policies, construction method statements and risk assessments, which should be compiled in line with current best practice guidance.

Harbour operations will continue to be undertaken in line within existing operational controls which should be amended to take account of any operational changes which may occur during the construction or operational phases of the new Holyhead Marina.

5.13.5 Summary of Scoping Exercise

It is proposed that Major Disasters & Accidents at construction and operational stages scoped out of the EIAR *and* be assessed through the specialist topics of biodiversity, water quality and soils, geology and contamination instead.

5.14 Cumulative Effects & Environmental Interactions

5.14.1 Context

Cumulative effects are defined as changes to the environment that are caused by an action in combination with other actions, arising from:

- the interaction between all of the different (existing and/or approved) Projects in the same area; as required by Annex IV, point 5 (e) of the EIA Directive;
- the interaction between the various impacts within a single Project.

The EU Guidance on the preparation of the Environmental Impact Assessment Report guidance states that it is important to consider effects, not in isolation, but cumulatively, as this may show that individually analysed impacts can become significant when they are added together, or with, other effects.

The coexistence of impacts may increase or decrease their combined impact. Impacts that are considered to be insignificant, when assessed individually, may become significant when combined with other impacts.

Cumulative effects can occur at different temporal and spatial scales. The spatial scale can be local, regional or global, while the frequency or temporal scale includes past, present and future impacts on a specific environment or region.

5.14.2 Baseline Conditions

The Holyhead Marina Rebuild Project will be assessed under each of the disciplines within the EIAR, in consideration of the existing and ongoing operations within the wider area.

Consideration will also be given to identified projects which have been approved (or are awaiting approval via planning or marine licencing), which may result in a cumulative effect with the proposed redevelopment. Table 5-7 below lists Projects identified to date that will be considered cumulatively along with the proposed redevelopment. It should be noted, that this list is not exhaustive and shall be reviewed in advance of and during the preparation of the EIAR.

Table 5-7 Existing and/or approved project in vicinity of Holyhead Marina.

Developer	Project Title & Description	Source of Information / Application Ref	Status
Conygar	Holyhead Waterfront Development Outline application for a mixed-use development consisting of a new marina, residential properties, a hotel, commercial, leisure and retail uses together with associated land reclamation and service infrastructure.	Planning Application 19C1046A/EIA/ECON	Consented
Stena Line	Marine Licence Application for Maintenance Dredging at Holyhead Port	Natural Resource Wales (NRW)	Consultation closed (26/09/19)
Stena Line	Marine Licence Application for Holyhead Port Expansion	Natural Resource Wales (NRW)	Consultation closes 9th October 2019
IACC	Screening Request for Holyhead Breakwater Refurbishment	Isle of Anglesey County Council SCR/2019/50	EIA Screening Request submitted to IACC / NRW.
Conygar	Parc Cybi Stage 2 Mixed-use employment developments on the southern edge of Holyhead, close to the A55. Primarily distribution and warehousing space but also includes an 80-bed hotel.	Planning Application	Consented
Land and Lakes	Penrhos Leisure Village A leisure village at Penrhos Coastal Park, Holyhead, with up to 500 new lodges and cottages and 315 new dwellings at Kingsland.	Planning Application 46C427K/TR/EIA/ECON	Consented
Orthios Group	Anglesey Eco Park including: a 299 megawatt electric (MWe) biomass power station within the existing consented scheme; prawn-growing facility (aquaculture); large soil-less indoor vegetable growing facility (hydroponics); home compostable food packaging facility; the compostable food packaging centre of excellence; research and development; and a deep water jetty for bulk import.	Planning Application (determined by DECC)	Consented.
Minesto	Holyhead Deep 10MW (and phased development to 80MW) Tidal kite installation off the coast of Holyhead, plus on-land elements and grid connection.	Environmental Statement / NRW Scoping Opinion.	Consented.

Morlais	West Anglesey Demonstration Zone Menter Môn has been awarded a long-term lease to manage an area of seabed off the west coast in order to develop the marine energy sector. Planning Application expected September 2019.	Public Consultation. Planning Application to be submitted in September 2019.	Reasonably Foreseeable.
IACC	Business units at Penrhos Full application for the erection of 10 flexible business units including associated parking and service yard, landscaping, vehicle charging points, solar panels and two bin / recycling storage and bike storage.	Planning Application 19LPA1023A/CC	Consented.
Anwyl Homes	Residential development at South Stack Road (Phase 1), Holyhead Construction of 123 detached and semidetached homes on an 11-acre site.	Planning Application 19C608F	Under construction
Anwyl Homes	Residential development at South Stack Road (Phase 2) Full application for the erection of 46 dwellings together with the creation of a new vehicular access on land adjacent to Parc Tyddyn Bach, Holyhead.	Planning Application FPL/2018/57	Application Submitted.
Stena Line Port Limited	Port of Holyhead Expansion Construction of a deep water cruise terminal and associated terminal buildings, as well as improvements to the access roads.	Scoping Report	Reasonably Foreseeable.
Huws Gray	Builders Merchant Yard Full application for the erection of a building to be used as a builders merchant with warehouse and sales floor areas (suitable for general use), construction of new vehicular site access,	Planning Application FPL/2018/25	Consented.
Horizon Nuclear Power	Wylfa Newydd New Nuclear Power Station	DCO Application National Infrastructure Planning website	DCO Examination Completed.

5.14.3 Proposed approach to the EIAR

A Cumulative assessment will be undertaken as part of the EIAR to ensure that the combined effects of the proposed Holyhead Marina Rebuild development and other influences are assessed together, and not as individual aspects of the environmental assessment.

The following guidelines and publications will be considered when determining the other projects to be considered for their potential to generate cumulative effects with the Holyhead Marina Rebuild Project:

- European Commission (EC) Guidelines for the Assessment of Indirect and Cumulative Impacts (1999);

- European Commission (EC) Guidance on the preparation of the Environmental Impact Assessment Report (2017); and
- UK Planning Inspectorate (PINS) Advice Note 17: Cumulative effects assessment relevant to national significant infrastructure projects. Version 1, 2015.

5.14.4 Preliminary Mitigation Measures

Mitigation measures will be outlined under each of the disciplines assessed within the EIAR.

6 SUMMARY & CONCLUSIONS

Detailed scoping has been undertaken in respect of the Holyhead Marina Rebuild Project in order to assist the Competent Authorities (Marine Management Organisation and Natural Resources Wales) in adopting a scoping opinion. The purpose of the scoping exercise is to identify issues of environmental significance which would require detailed consideration within the Environmental Impact Assessment Report.

In preparing the EIAR Scoping Report, the following legal provisions and guidelines were considered:

- European Commission Environmental Impact Assessment of Projects Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU)(European Commission, 2017);
- European Commission Environmental Impact Assessment of Projects Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)(European Commission, 2017);
- European Commission Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)(European Commission, 2017);
- Natural Resources Wales Guidance Note 13: Scoping and Environmental Impact Assessment for Marine Developments (NRW 2017).

The EIAR scoping exercise has identified potentially significant environmental effects that require more detailed examination and analysis in an EIAR and those that can be 'scoped out' of an EIAR. Table 6-1 summarises a range of potential environmental effects that have been scoped in or out of EIAR, based on the analysis in the foregoing sections of the report.

Table 6-1 Summary of EIAR Scoping

Environmental Effect		Scoped In	
		Construction Stage	Operational Stage
Biodiversity	Designated Sites	✓	
	Benthic Biodiversity & Fisheries	✓	
	Marine Mammals	✓	
	Avian Biodiversity	✓	
	Invasive Species	✓	✓
Soils Geology, Hydrogeology & Hydrology	Soils & Geology		
	Hydrogeology & Hydrology		
Water Quality & Flood Risk Assessment	Water Quality	✓	
	Flood Risk Assessment	✓	✓
Material Assets	Coastal Processes		✓
	Traffic & Transportation	✓	

REPORT

Environmental Effect	Scoped In	
	Construction Stage	Operational Stage
Air Quality & Climate Change	✓	✓
Noise & Vibration	✓	
Archaeology & Cultural Heritage	✓	
Landscape & Visual	✓	✓
Waste		
Population, Human Health & Socio Economics		
Major Disasters & Accidents		
Cumulative Effects & Environmental Interactions	✓	✓

7 REFERENCES AND BIBLIOGRAPHY

Anglesey Nature (2016a) Beddmanarch–Cymyran SSSI. Available at:

<http://angleseynature.co.uk/webmaps/beddmanarch.html>. [Accessed on 22 September 2019].

Anglesey Nature (2016b) Holy Island Coast SSSI. Available at:

<http://www.angleseynature.co.uk/WEBMAPS/glannauydesc.htm>. [Accessed on 22 September 2019]

Baines. M.E and Evans. P.G.H (2012). Atlas of the marine mammals of Wales. CCW Marine Monitoring Report No. 68. 2nd edition, 139pp.

European Commission Environmental Impact Assessment of Projects Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU)(European Commission, 2017);

European Commission Environmental Impact Assessment of Projects Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)(European Commission, 2017);

European Commission Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)(European Commission, 2017);

GeoMôn. (2016a). GeoMôn UNESCO Global Geopark. Available online:

<http://www.geomon.co.uk/welcome/4533286587>. [Accessed 22 September 2019].

GeoMôn. (2016n). Geosites. Available online: <http://www.geomon.co.uk/geosites/4557751310>. [Accessed 22 September 2019].

Natural Resources Wales Guidance Note 13: Scoping and Environmental Impact Assessment for Marine Developments (NRW 2017).

JNCC (2001). SPA Description: Holy Island Coast.

JNCC and NRW. (2015). SAC Selection Assessment: North Anglesey Marine / Gogledd Môn Forol. January, 2016. Joint Nature Conservation Committee, UK.

JNCC and NRW. (2016). Harbour Porpoise possible Special Area of Conservation: North Anglesey Marine / Gogledd Môn Forol Draft Conservation Objectives. January, 2016. Joint Nature Conservation Committee, UK.

JNCC. (2016a). The Geological Conservation Review Sites.

Available at: <http://jncc.defra.gov.uk/page-2947> [Accessed 5 September 2019].

JNCC. (2016b). SAC Selection, Holy Island Coast. Available at:

<http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0013046>. [Accessed 5 September 2019].

Natural Resources Wales. (2015). Proposal to extend and reclassify Ynys Feurig, Cemlyn Bay and The Skerries Special Protection Area and rename it as Anglesey Terns SPA. Advice to the Welsh Government.

Welsh Government. (2004). Technical Advice Note 15: Development and Flood Risk. Available online: <http://gov.wales/docs/desh/publications/040701tan15en.pdf> [Accessed 22 September 2019].

Appendix A Holyhead Marina Pre-Application Advise (September 2019)

Appendix B Didemnum vexillum: survey of distribution and extent in Holyhead Harbour after storm Emma, October 2018

Appendix C – Responses from Pre-Consultations

Appendix D - Assessment of Wave Climate during Storm Emma (RPS 2018)

Appendix E – Listed Buildings