

Greenore Port Unlimited Company

Proposed Greenore Port  
Operations and Maintenance Facilities  
at Greenore Port,  
Greenore, Co. Louth

**VOLUME III**  
APPENDICES TO  
ENVIRONMENTAL IMPACT ASSESSMENT REPORT



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# **APPENDIX 1.1**

## **CUMULATIVE IMPACTS: PROJECTS AND PLANS**

### **VOLUME III**

#### **APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT**



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# Cumulative Assessment Projects and Plans RFI Update

Proposed Greenore Port Operations and Maintenance  
Facilities at Greenore, Co. Louth

on behalf of Greenore Port Unlimited Company

October 2024



McCutcheon Halley  
CHARTERED PLANNING CONSULTANTS

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# 1. Introduction

This assessment sets out the projects and plans that the project team should consider when carrying out the cumulative assessment sections of individual EIA chapters and the in-combination section of the Appropriate Assessment Reports for the proposed Greenore Operations and Maintenance (O&M) facilities which generally comprises three warehouse/office buildings, a carpark, a 70m berth, a pontoon, and associated development works, including landscaping, drainage, lighting, etc.

Cumulative effects are those that accrue over time and space from several development activities – the impact of the Proposed Development should therefore be considered in conjunction with the potential impacts from other projects or activities, which are both reasonably foreseeable in terms of delivery and are located within a realistic geographical scope where environmental impacts could act together with the Proposed Development to create a more significant overall effect.

The cumulative impact assessment should not consider other developments that are already constructed and operating, as such existing developments will be accounted for in the baseline conditions established for the individual specialist topics. The requirement of the EIA Directive and Guidelines to consider existing projects is therefore dealt with in the baseline.

Accordingly, the cumulative assessment should consider only proposed developments, being the “permitted or planned projects”.

A fundamental requirement of assessing cumulative/in-combination effects is to identify those projects, plans or activities with which the proposed development may interact and create a cumulative impact. These interactions can arise during the construction, operation and decommissioning phases.

A decommissioning phase is not anticipated for the proposed development. The infrastructure is being developed to service offshore wind farms. When those wind farms near the end of their design life (anticipated approx. 25 years), they will likely be ‘repowered’ i.e. turbines will be replaced (partially or totally) with more powerful and efficient models using the latest technology. The proposed O&M facilities will, therefore, continue to be required.

In the unlikely event that full decommissioning occurs, the O&M infrastructure (pontoon and warehouses) will be utilised as part of the existing port operations subject to obtaining the requisite consents.

The project team should consult the following resources.

- The ‘Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment’ (Government of Ireland, 2018) provides high-level guidance on assessing cumulative effects.
- The EPA’s ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports’ (EPA, 2022) provides a

checklist for assessing cumulative effects, it should be considered whether the EIAR has: 'described cumulative effects? considered cumulative effects due to cumulation of effects with those of other projects that are existing or are approved but not yet built or operational?'

- The Office of the Planning Regulator (OPRs) Practice Note PN01 "Appropriate Assessment Screening for Development Management" provides the following advice with respect to in-combination assessment,

*"In-combination effects must examine plans or projects that are:*

- *Projects completed,*
- *Projects approved but not started or uncompleted,*
- *Projects proposed, i.e. for which an application for approval or consent has been made, including refusals subject to appeal and not yet determined,*
- *Proposals in adopted plans and*
- *Proposals in finalised draft plans formally published or submitted for consultation or adoption.*

*Plans and projects that are not yet proposed do not generally have to be taken into account in the assessment of in-combination effects, even if they are part of an overarching masterplan. The exception is where the project is considered to be functionally interdependent with the development before the competent authority. An example of this is a grid connection for a proposed wind farm.*

*The consideration of in-combination effects is not restricted to similar types of plans or projects covering the same sector of activity (e.g. a series of housing projects). All types of plans or projects that could, in-combination with the project under consideration, have a significant effect, should be taken into account."*

The scope of this assessment has been updated to reflect planning applications for offshore wind farms submitted with An Bord Pleanála in the period since the original EIAR was produced and submitted to Louth County Council on 28th May 2024. Please refer to section 4.7 for further information.

Changes to the text are shown in blue, text to be deleted is shown as ~~strikethrough~~.

## 2. Zone of Influence

The Zone of Influence (Zoi) for each environmental discipline must be defined by the appointed specialist. The basis for selecting the Zoi must be set out in each chapter of the EIAR and in the AA Screening Report.

Projects and plans that are in closest proximity to the Proposed Development Site are generally considered to have the greatest potential to contribute to cumulative effects.

## 3. Project Type Overview

The following project types were examined:

1. Planning permissions – last 5 years
2. Planning applications
3. Projects holding a Maritime Area Consent (MAC)
4. Applications for Maritime Usage Licences
5. Foreshore Licenses
6. Offshore Windfarm Grid Connections
7. Dumping at Sea
8. Ramsar Sites
9. Aquaculture Licenses in Carlingford Lough
10. Wastewater Discharge Licenses
11. Plans

This list of projects includes existing or approved developments, including those that are under construction, permitted but not yet implemented, and submitted but not yet determined.

## 4. Planning Permissions

A search of committed developments (i.e., ones that have received full or outline planning permission) proximate to the Proposed Development Site was undertaken using:

- the An Bord Pleanála Online Planning search tool,
- the web map portal providing spatial information relevant to the planning process in Ireland (myplan.ie) and
- the Louth County Council Online Planning Register.

A desktop planning history search for the last five years and within 1.5 km of the Proposed Development was undertaken. Planning applications older than five years have not been assessed as they have been deemed to either have expired or have been constructed (due to the standard five-year life of planning consents).

## 4.1 Greenore Port

Permitted and not yet commenced development at Greenore Port are listed below. Notably, should the proposed O&M Facilities receive consent, then these permissions would not be implemented as the developable areas overlap with this proposal.

Table 1 Permitted Greenore Port Development

Fig 3Ref	Planning Ref	Description	Application type	Decision	Date	AASR /NIS
12	LCC 20543 (ABP 310184-21)	Demolition of existing structures inc. railway and engine room walls and construction of two new stores and an ESB substation.	Permission	Conditional Upheld on Appeal	18/01/2022	AASR
14	LCC 20268 (ABP 307862-20)	Extension and modifications to the existing former OpenHydro warehouse and modifications to the existing warehouse 'Store 0'. The development applied for is within Greenore Port's landholding within the curtilage also exists the watertower, lighthouse and lighthouse keeper's cottage which are all included in the Louth Record of Protected Structures Ref. LH009-01, LH009-043, LH009-044 respectively	Permission	Conditional Upheld on Appeal	13/12/2021	AASR



## 4.2 Greenore Area

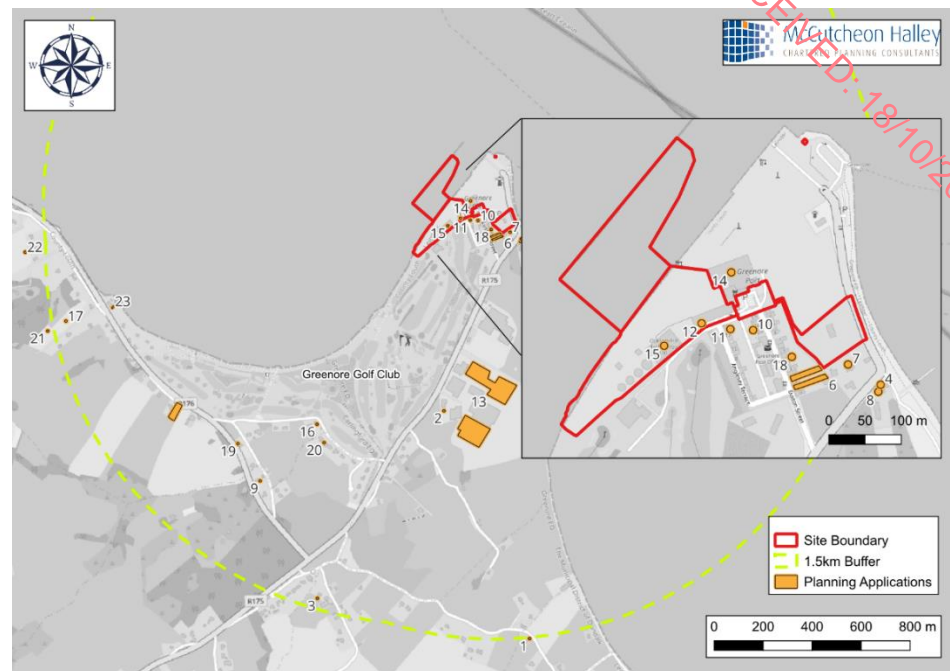


Figure 1 Granted Planning Applications in the ZOI in the past 5 years

The following Table lists residential projects that have received permission over the last 5 years. The reason for selecting the 5-year timeframe is, unless stated otherwise, that is the default life of a permission. The review demonstrates that the permissions predominantly relate to extensions or modifications to existing dwellings, with three permissions relating to new dwellings. None of the applications included an Appropriate Assessment Screening Report (AASR) and or Natura Impact Statement (NIS). The granting of permission demonstrates that the planning authority was satisfied that for each development, they would not, alone or in combination with other plans or projects, adversely affect the integrity of any European sites.

Table 2 Permitted Residential Development

Fig. 1 Ref.	Plan ning Ref.	Description	Applicati on type	Decision	Date	AAS R /NI S
1	LCC 2360 119	Retention of as constructed dwellinghouse previously granted planning permission under planning Ref. No. 97/866 and all associated site development works	Retention	Conditio nal	14/07/20 23	no

Fig. 1 Ref.	Plan ning Ref.	Description	Applicati on type	Decision	Date	AAS R /NI S
3	LCC 2323 4	Retention permission for (a) a domestic store; (b) a domestic outbuilding comprising of a games room, gym and home office and (c) associated site development works	Retention	Conditio nal	12/01/20 24	no
5	LCC 2385	Retention permission for extensions and alterations to the existing dwelling, attached domestic garage and associated site development works	Retention	Conditio nal	21/07/20 23	no
6	LCC 231	Permission for the following: (1) demolition of a single storey extension and outbuilding to the rear of the existing house; (2) alterations to the rear of the existing house; (3) construction of a one storey extension to the rear of the existing house	Permissio n	Conditio nal	24/02/20 23	no
7	LCC 2261 4	Permission for elevational changes and alterations to existing dwelling house and all associated site works	Permissio n	Conditio nal	04/11/20 22	no
9	LCC 2114 39	Retention permission for a single storey extension to the side and rear of the dwelling	Retention	Conditio nal	11/03/20 22	no
10	LCC 2113 31	Permission for a single storey extension to the rear of the dwelling and all associated site works. The existing building is a Protected Structure in the Louth County Council Development Plan Ref. No. LHS009-036B, NIAH Ref. 13831027	Permissio n	Conditio nal	17/12/20 21	no

Fig. 1 Ref.	Plan ning Ref.	Description	Applicati on type	Decision	Date	AAS R /NI S
11	LCC 2112 23	Retention permission for development that consists of an extension to the rear of dwelling. This building is listed as a protected structure under the Louth County Development Plan 2015-2021 Ref No LHs 009-004	Retention	Conditio nal	10/11/20 21	no
16	LCC 1975 4	Permission for extension to side of existing dwelling house, upgrading of existing effluent treatment system on site and all associated site development works. *Significant Further Information submitted 01/07/20*	Permissio n	Conditio nal	28/07/20 20	no
17	LCC 1972 7	Permission for one dwelling house, effluent treatment system and all associated site development works.*Significant Further Information submitted 17/6/20*	Permissio n	Conditio nal	14/07/20 20	no
18	LCC 1920 2	Permission for a one storey extension to rear of the existing dwelling, a protected structure (ID: LHS009-016, NIAH No. 13831014), alterations to the existing layout and associated site works. *Significant Further Information submitted 22/05/2019*	Permissio n	Conditio nal	18/06/20 19	no
19	LCC 1871 8	The development will consist of (1) Retention of an existing dwelling house, domestic garage and associated site development works and (2) Permission for	Retention	Conditio nal	19/01/20 19	no

Fig. 1 Ref.	Plan ning Ref.	Description	Applicati on type	Decision	Date	AAS R /NI S
		alterations to an existing dwelling house and part conversion of roof space to habitable accommodation.				
20	LCC 23218	Permission for extension and alterations to the ground and first floor level of an existing dwelling house, a new waste water treatment system and associated site development works **Significant further information received on 26.9.23**	Permissio n	Conditio nal	13/10/2023	no
21	LCC 21572	Permission for development that will consist of the construction of a two storey dwelling house, a single storey domestic garage, septic tank with percolation area, use of existing entrance onto public road and all associated site development works. *FI received on 06/12/2021*	Permissio n	Conditio nal	21/12/2021	no
22	LCC 21732	Permission for a dwelling house, domestic garage, waste water treatment system and associated site development works *Significant Further Information submitted 04/11/21 which includes a revised house design*	Permissio n	Conditio nal	24/11/2021	no
24	LCC 2360256	Permission for extensions and modifications to existing dwelling house at 15 Euston Street, Greenore, Co. Louth. Permission to include for all associated and ancillary site	Permissio n	Conditio nal	15/09/2023	no

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Fig. 1 Ref.	Plan ning Ref.	Description	Applicati on type	Decision	Date	AAS R /NIS
		development works. The existing dwelling house is a Protected Structure, Ref; LHS 009-020, and located within the Greenore Architectural Conservation Area				

Table 4 presents details of non-residential developments permitted in Greenore. The application for development at the **Coastguard House** is notable. It was accompanied by a AASR and NIS, <https://apps.louthcoco.ie/idswebDPSS/ViewFiles.aspx?docid=1034325&format=djvu>

The planning authority granted permission and concluded in its Appropriate Assessment.

Therefore, based on the further information submitted, the Planning Authority is now satisfied that the development by way of direct, indirect or secondary impacts, either individually or in combination with other plans and projects would not have a significant effect on any Natura 2000 sites.

<https://apps.louthcoco.ie/idswebDPSS/ViewFiles.aspx?docid=1037985&format=djvu>

(see pages 11-14)

The decision is under appeal, and a decision date is unknown <https://www.pleanala.ie/en-ie/case/315830>

The appeal documentation is not uploaded to the ABP database. However, the observation (see link below) made to the Local Authority during the application processing provides a good indication of the issues raised in the appeal. Broadly they are,

1. Title Issues
2. Impact on Built Heritage
3. Appropriate Assessment

<https://apps.louthcoco.ie/idswebDPSS/ViewFiles.aspx?docid=1016806&format=djvu>

A second permission under appeal relates to Carlingford Oyster Company Limited's retention and completion of a partially constructed single-storey extension at a production building. The reports on file reference inter alia,

- encroachment into the SAC and the impact of additional people using the area on the brent geese.
- Carlingford Lough as a Designated Shellfish Water area.

Table 3 Permitted Commercial/Community Development

Fig 1 Ref	Planning Ref.	Description	Application type	Decision	Date	AASR /NIS
2	LCC 23254	Permission for alterations and extension to existing precision engineering workshop and all associated site works	Permission	Conditional	01/09/2023	no
4	LCC 23125	Permission for the change of use of existing building from commercial/residential use to voluntary community workshop and all associated site development works	Permission	Conditional	18/08/2023	no
13	LCC 20362	Permission for development consisting of the installation of a grid connected photovoltaic panel system fitted to the roofs of existing warehouse buildings.	Permission	Conditional	21/07/2020	no
23	LCC 2360352	Retention and completion of a partially constructed single storey extension permitted under P.A. Ref. No. 17/282 to the existing production building. The existing production building was permitted under P.A. Ref. 93/ 84 and has operated from the site for nearly 30 years. Permission is also sought to retain and complete c. 25 sq.m of additional production floorspace to the southwest of the partially constructed extension. The retention and completion of the	Retention	Conditional Under Appeal ABP- 318516-23 <a href="#">Appeal Refused</a>		AASR



Fig 1 Ref	Planning Ref.	Description	Application type	Decision	Date	AASR /NIS
		extension and additional floor area will facilitate the internalisation of part of the production process				

#### 4.2.1 Carlingford



Figure 2 Granted notable Planning Applications in Carlingford in the past 5 years

The nearest settlement to Greenore is Carlingford, approx. 2.5kms, as the crow flies. Carlingford also sits on the Lough, and similar to Greenore, Carlingford Lough SPA and Carlingford Shore SAC designations exist there.

Like Greenore, the planning search identified numerous extensions and modifications to existing dwelling units. The most notable development of scale is for 30 units which received permission in 2017 and a subsequent extension of duration was issued in 2021.

Table 4 Granted notable Planning Applications in Carlingford in the past 5 years

Reference	Description	Application type	Decision	Date	AASR /NIS
<b>LCC 16852</b>	Permission for development of a managed step down housing community with support facilities. The proposed development will consist of 30 no managed residential units, and associated ancillary facilities designed specifically for older residents. The proposed development is comprised of 9 no single storey 1-bed studio units, 3 no single storey 1-bed units, 11 no 1-bed apartments all with own door access over 2 storeys, 7 no 2-bed units and a 2 storey community and administration facility as well as associated site works (roads, drainage, street lighting, hard & soft landscaping, utility building & services)	Permission	Conditional	24/03/2017	AASR
<b>LCC 21728</b>	EXTENSION OF DURATION OF 16/852 - Permission for development of a managed step down housing community with support facilities.	Extension of Duration	Conditional	09/07/2021	no

Reference	Description	Application type	Decision	Date	AASR /NIS
	The proposed development will consist of 30 no managed residential units, and associated ancillary facilities designed specifically for older residents. The proposed development is comprised of 9 no single storey 1-bed studio units, 3 no single storey 1-bed units, 11 no 1-bed apartments all with own door access over 2 storeys, 7 no 2-bed units and a 2 storey community and administration facility as well as associated site works (roads, drainage, street lighting, hard & soft landscaping, utility building & services)				

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#### 4.2.2 Greencastle (NI)

At a distance of approx. 2.5 kms across Carlingford Lough, Greencastle is the nearest settlement in Northern Ireland to Greenore. The Carlingford Lough ferry connects the settlements.

Our search did not identify any application of scale/significance in Greencastle. The largest relates to the development of three houses. As set out in the following Table.

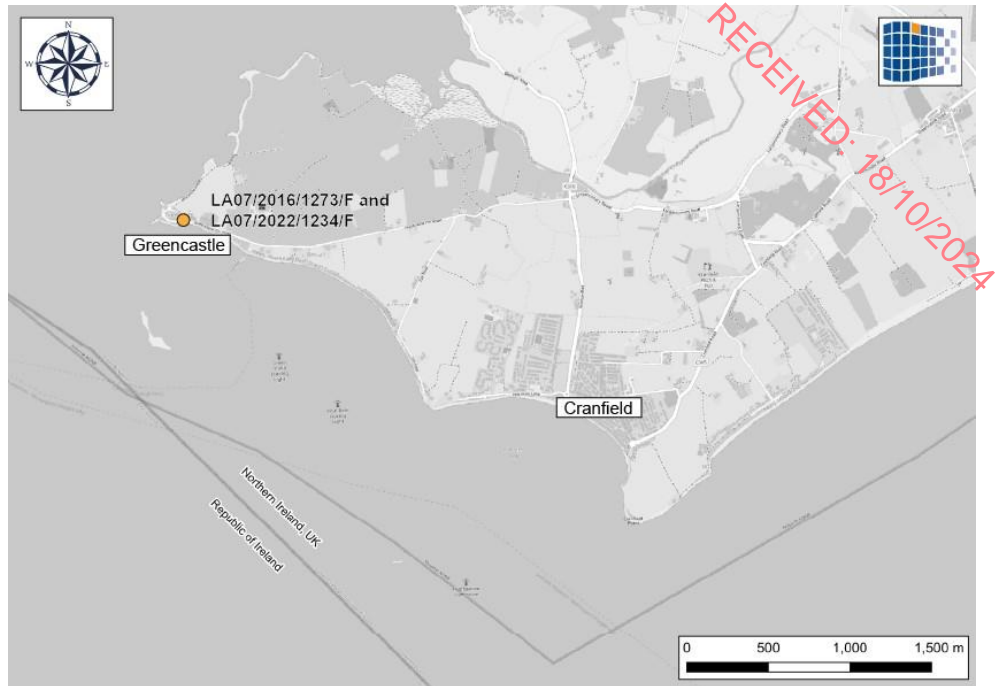


Figure 3 Granted notable Planning Applications in Greencastle (NI) in the past 5 years

Table 5 Granted notable Planning Applications in Greencastle (NI) in the past 5 years

Planning Ref.	Description	Decision	Date	HRA
LA07/2016 /1273/F	Demolition of existing dwelling and erection of 3 No. detached dwellings	Granted	16/08/2017	no
LA07/2022 /1234/F	Renewal of planning approval granted under LA07/2016/1273/F for the demolition of existing dwelling and erection of 3 no. detached dwellings	Granted	22/03/2023	no

### 4.3 Infrastructure Developments

There are some strategic projects of potential interest around Carlingford Lough.

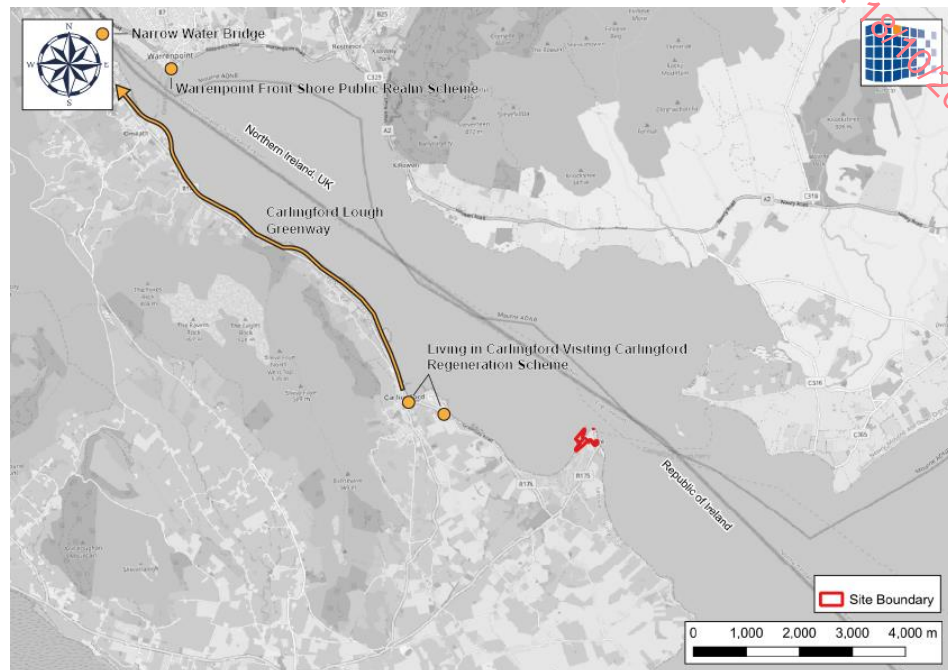


Figure 4 Infrastructure Developments

#### 4.3.1 Part 8 – Living in Carlingford Visiting Carlingford Regeneration Scheme, Carlingford, Co. Louth

“Living in Carlingford - Visiting Carlingford” is a Rural Regeneration and Development Fund (RRDF) Project which comprises public realm development and associated works split between the two red line boundaries, namely that of the Town Centre Area (1.4 ha) and the Car Park and Tennis Court Area (1.3 ha) at Carlingford, Co. Louth. The urban realm works in the Town Centre Area will result in the loss of some existing public car parking, this loss of car parking spaces will give rise to the need for new public car parking, mainly to be provided at the so-called Car Park and Tennis Court Area. The proposal is located at a distance of approx. 2.7 kms across Carlingford Lough.

The scheme was approved on 23<sup>rd</sup> June 2023 (LCC Reg Ref PT8LH13). The AA Screening concludes:

*“The proposed development is not predicted to result in any Likely Significant Effects on any European site(s) within the Zone of Influence of the proposed development. In conclusion, it is the opinion of RPS that AA (‘Stage 2’) is not required.”*

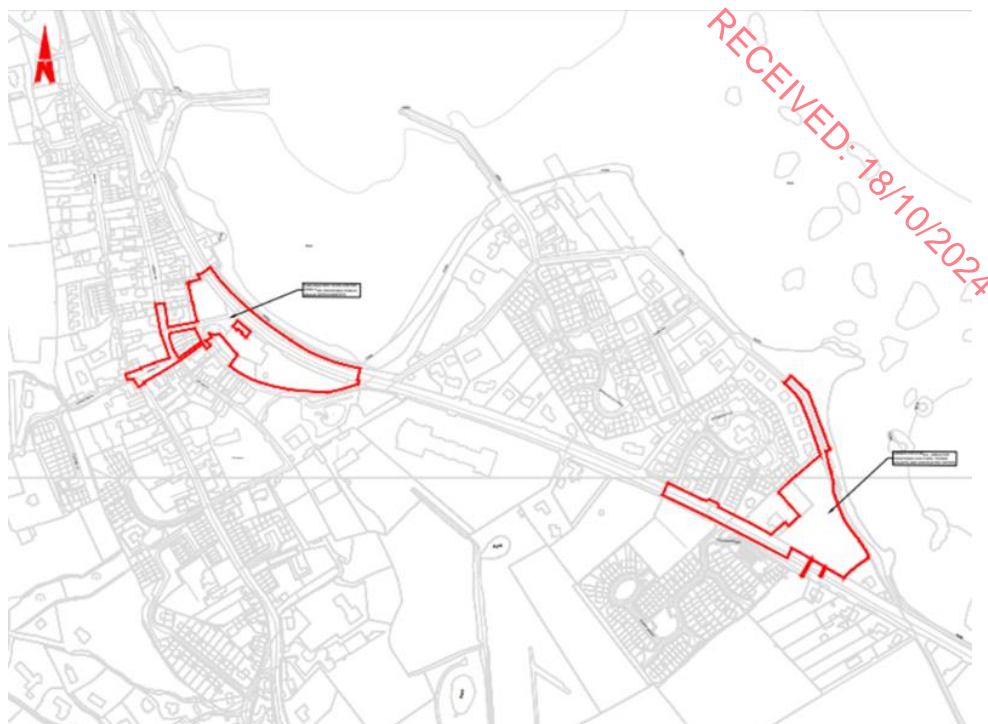


Figure 5 Living in Carlingford - Visiting Carlingford Regeneration Scheme Location

#### **4.3.2 Part 8 - Carlingford- Lough Greenway (as part of the Newry to Dundalk Greenway)**

The Carlingford Lough Greenway is a cross border project and comprises the creation of 10.1 km of new Greenway, linking Newry City in Northern Ireland to Carlingford in Ireland. It is located at a distance of c. 3.5 km to 15km to Greenore Port. The EU funded project is led by Louth County Council, working in collaboration with Newry, Mourne and Down District Council and East Border Region Ltd. The new stretch will link with the previously completed Portadown Newry element resulting in a total length of 52 km of cross border Greenway along the east coast of the island of Ireland.

The overall greenway comprises 5 sections as below, the construction is expected to be completed mid-2024. If this programme is achieved the construction will not overlap with the proposed development at Greenore.

1. Albert Basin Newry to Victory Lock - Existing
2. Victory Lock to Border - under construction (Application to Newry Mourne Down District Council)
3. Border to Omeath – under construction
4. Omeath to Carlingford Marina – Existing, developed in 2013
5. Carlingford Marina to Carlingford - under construction

Sections 2; 3 and 5 approved in November 2019 under LCC Reg Ref 19731.

An AA Screening Report was prepared and concludes: *"From the findings of the Screening stage appraisal, it is concluded that the proposed development is not directly connected with or necessary to the*



management of any European site; Will not give rise to potential significant effects on the Qualifying Interests of any European site; and will not give rise to potential in-combination effects with other projects considered." NIS not required.

<https://www.eplanning.ie/LouthCC/AppFileRefDetails/19731/0>

#### Location - Carlingford Lough Greenway



Figure 6 Greenway Route

### **4.3.3 Warrenpoint Front Shore Public Realm Scheme and Breakwater**

Application Reference: LA07/2021/1655/F

<https://planningregister.planningsystemni.gov.uk/application/513016>

The Warrenpoint Front Shore Public Realm scheme is a key priority under the strategy through enhancing and creating a more vibrant public space along the Front Shore area, at a distance of 11km to Greenore across Carlingford Lough. The new works will deliver a high-quality public realm scheme including replacement of footpaths, repairs to the sea wall and replacement street furniture.

A Habitats Regulations Assessment was not included with the application.

The majority of the proposed works have been carried out.

### **4.3.4 Part 10 - Narrow Water Bridge Project**

Narrow Water Bridge project a proposed bridge link between the Cooley Peninsula area in County Louth and the Warrenpoint and Mourne area in County Down at a distance of c. 12.5km to Greenore across Carlingford Lough. It is a cable-stayed bridge with rolling bascule opening span that enables tall ships, leisure craft and other marine vessels access to the Victoria Lock and the Albert Basin in Newry, Co. Down. The south span is approximately 138.35m and the north span is approximately 56.8m giving a total length of approximately 195m.

Due to the location of the proposed development spanning the Republic of Ireland and Northern Ireland border, the planning application for the proposed development was submitted to both An Bord Pleanála (ABP) in the Republic of Ireland and the Planning Service Northern Ireland in the Department of Environment (DoE), Northern Ireland.

An Environmental Impact Statement (EIS) and Natura Impact Statement (NIS) / Habitats Regulation Assessment (HRA) were prepared for the proposed development and submitted to An Bord Pleanála (ABP) and Planning Service Northern Ireland in the Department of Environment (DoE) in 2012. Following which, an Oral Hearing was held in June 2012 before ABP and Planning Service Northern Ireland granted approval for the project in October 2012.

12. Northern Ireland Planning Application Reference Number  
- LA07/2017/1304/DC

13. An Bord Pleanála for Louth County Council - 15.HA0037

The Application for Marine Construction Works has been submitted to The Department of Agriculture, Environment and Rural Affairs (DAERA) on behalf of the Applicant, Louth County Council on 18<sup>th</sup> December 2023.

[Narrow Water Bridge - ML2022003 | Department of Agriculture, Environment and Rural Affairs \(daera-ni.gov.uk\)](https://www.daera-ni.gov.uk/)



Figure 7 Narrow Water Bridge Layout

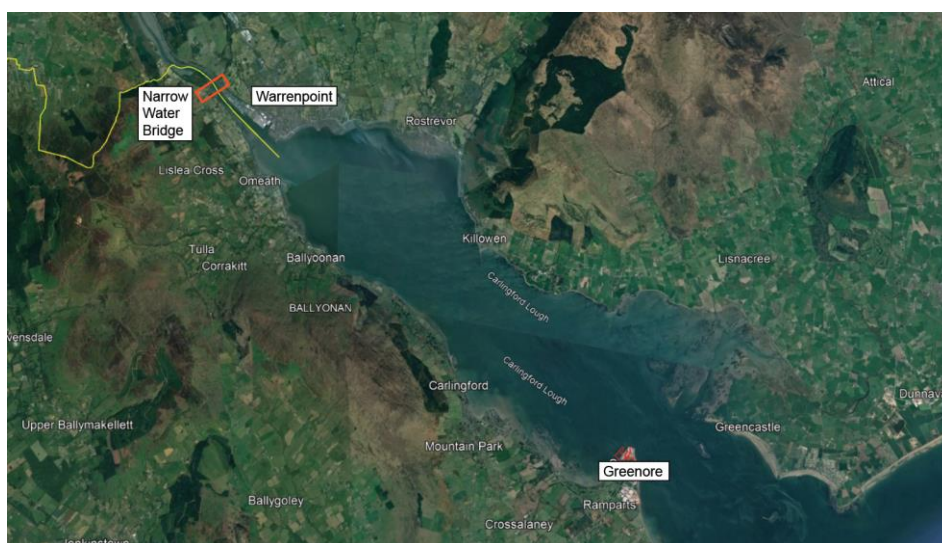


Figure 8 Narrow Water Bridge Location

## 4.4 Potential Future Projects

### 4.4.1 Newry Southern Relief Road

The scheme is being developed to provide a strategic link between the A1/N1 Belfast to Dublin corridor and the A2 Warrenpoint Road, bypassing Newry City Centre at a distance of c. 18km to Greenore across Carlingford Lough.

Newry City has for many years suffered from traffic congestion, some of which has been relieved by upgrading sections of the Eastern Seaboard (A1/N1 Belfast-Dublin) KTC to a high standard dual carriageway. Strategic traffic travelling between the A1 dual carriageway and A2 dual carriageway, including Heavy Goods Vehicles (HGVs) between Belfast / Dublin and Warrenpoint Port, is currently required to pass through Newry city centre.

The scheme would link to the Eastern Seaboard (A1/N1 Belfast-Dublin) Key Transport Corridor (KTC), which includes road and rail links between Larne (via the Belfast Metropolitan Area) and the border at Newry, facilitating onward travel to Dublin and improving access to other regional gateways. The scheme is part of DfI's Strategic Road Improvement (SRI) Programme and has also been identified within the Banbridge, Newry and Mourne Area Plan 2015.

The Department on 14<sup>th</sup> August 2023 published a prioritised list of major road schemes that will continue to be progressed. Following publication of the draft Statutory Orders and the EIAR a formal period of consultation will take place. This consultation will provide an opportunity for anyone who wishes to express an opinion on the EIAR or to object to the making of the Orders. This is currently scheduled for Spring 2024.





Figure 9 Preferred Route Newry Southern Relief Road



Figure 10 Newry Southern Relief Road Location

## 4.5 Plans

### 4.5.1 Louth County Development Plan 2021-2027

The subject site is located within the functional area of Louth County Council and is governed by the Louth County Development Plan 2021-2027 (LCDP), which was adopted by the members of Louth County Council (LCC) at a Special Council Meeting on the 30<sup>th</sup> of September 2021. The Plan came into full effect on the 11<sup>th</sup> of November 2021.

### 4.5.2 Warrenpoint Port Masterplan 2018 – 2043

Further plans of relevance in the area are Warrenpoint Port Masterplan 2018 – 2043, which is located at Warrenpoint Port at the northwestern end of Carlingford lough, c. 11 km northwest of the proposed development.

Warrenpoint Port is the second largest port in terms of volume of traffic and goods handled in Northern Ireland and fifth on the island of Ireland.

The Masterplan was launched in 2018 and sets out five main development objectives which include the development of infrastructure projects such as the Newry Southern Relief Road (Section 2.3.1), improvements of the cargo port, RO-RO terminal, dredging, etc.

There is no known live planning application associated with the port.

### 4.5.3 Carlingford Lough MPA Management Plan

The Marine Protected Area Management and Monitoring (MarPAMM) project developed tools for the efficient management of Marine Protected Areas (MPA) within the Republic of Ireland, Northern Ireland and Western Scotland and was completed in 2022.

Following the development of six of management plans, MarPAMM aimed to increase capacity in and collaboration between Ireland, Northern Ireland and Scotland for MPA management planning linking this planning to wider, integrated marine planning and management.

The Carlingford Lough MPA management guidance plan delivers outputs from INTERREG VA Objective 2.2, through the production of a Site-Specific MPA Management document for the Carlingford Lough Special Protected Area (SPA) area.

The objective of the MarPAMM Carlingford MPA management plan is to provide all necessary supports for the efficient delivery of conservation benefits from MPAs within the site, whilst including all valuable input from local communities and stakeholders.

[Carlingford-Lough-MPAs-Management-Plan.pdf \(mpa-management.eu\)](https://mpa-management.eu/Carlingford-Lough-MPAs-Management-Plan.pdf)

## 4.6 Maritime Licenses

### 4.6.1 Maritime Area Consent

Six Maritime Area Consents (MACs) have been granted under the MAC Phase One Application Process of which 5 are located off the Irish East coast.

Projects which have been granted a MAC must apply for planning permission within 18 months (June 2024).

~~At the time of writing, one MAC holder had submitted a planning application, with an application made to An Bord Pleanála on Friday 24th May, the application was not available to view on the An Bord Pleanála website. The applicant did provide the design team with baseline information to inform the marine mammal assessments supporting the subject application.~~

Table 6 granted Maritime Area Consents (MAC)

Holder	MAC No	Commencement Date	Purpose	ORESS 1 Result
Oriel Windfarm Limited	2022-MAC-001	23 December 2022	Offshore Windfarm	Not Successful
Sure Partners Limited (SSE Arklow)	2022-MAC-002	23 December 2022	Offshore Windfarm	Not Successful
Bray Offshore Wind Limited, Kish Offshore Wind Limited (Dublin Array)	2022-MAC-003 and 004	23 December 2022	Offshore Windfarm	Successful
North Irish Sea Array Windfarm Limited	2022-MAC-005	23 December 2022	Offshore Windfarm	Successful
Codling Wind Park Limited	2022-MAC-006	23 December 2022	Offshore Windfarm	Successful



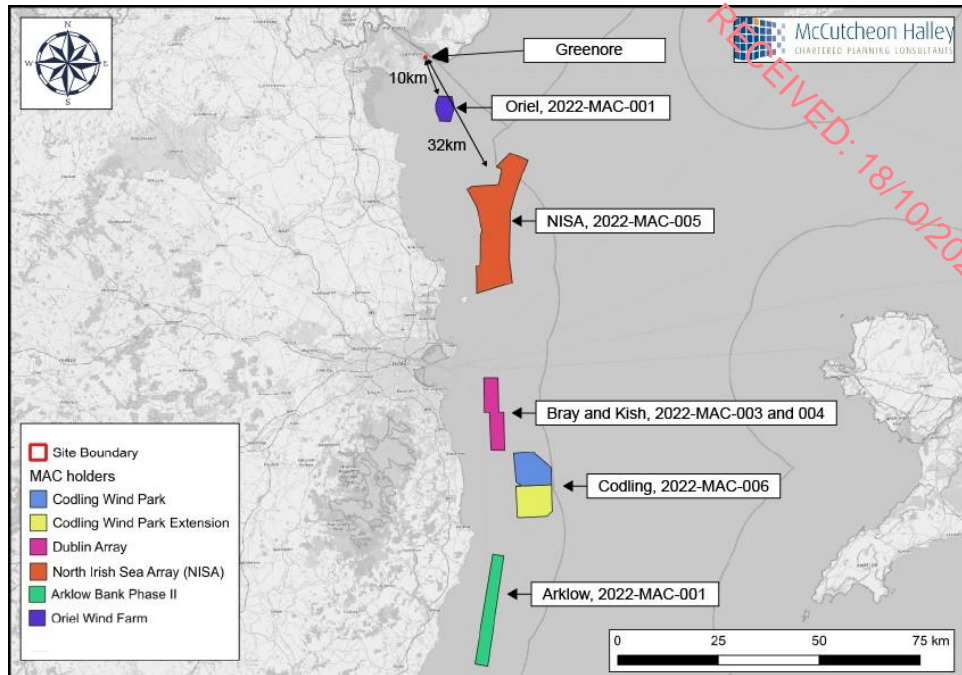


Figure 11 - MAC Areas for Offshore Windfarm projects off the Irish East Coast

#### 4.6.2 Applications for Maritime Usage Licences

There have been no applications made for a Maritime Usage Licence under the Maritime Area Planning Act 2021 for areas in the vicinity of Greenore.

The nearest application was made by Microsoft Ireland Operations Ltd. at Portmarnock for a Geophysical survey and site investigations for a proposed subsea fibre optic cable having a landfall in Portmarnock, County Dublin to evaluate options for the route traversing the Irish Sea to Abergele, Wales (Reference No LIC230018).

#### 4.6.3 Foreshore Licenses Carlingford Lough / Ireland

##### FS006575 Irish Water - Omeath Sewerage Scheme

Foreshore licence application for the purpose of extending an existing outfall pipe and associated works in connection with the proposed Omeath Waste Water Treatment Plant (c.10 km from Greenore).

According to this update, the scheme was due to complete Q4 2023

<https://www.water.ie/projects/local-projects/omeath-sewerage-scheme/#:~:text=The%20project%20will%20include%20the,the%20existing%20outfall%20pipe%3B%20and>

##### Greenore Port

The following licenses are in the vicinity of Greenore Port.

14. **FS006748** Greenore Port – Louth - Foreshore Lease application for the Development of **Berth No 2** at Greenore Port.

Commencement Date: 14.01.2019; Was to be constructed within 5 years from Commencement Date; Lease Term 35 years from Commencement Date.

→ Berth 2 has been constructed and is now operational.

15. **FS006676** Greenore Port – Louth - Foreshore licence and lease application for capital dredging works and installation of a mooring point

a. **Area A** – Foreshore License for **Dredging** Area: The extension of Berth 1 southward by 30m facilitated by the removal of approximately 1115m<sup>3</sup> of rock by dredging to a level of -7.5mCD. The dredged rock would be reused at the Ports storage yard.

Commencement Date: 01.07.2020; License Term 2 years from Commencement Date.

→ Dredging has been carried out.

b. **Area B** - Foreshore Lease for **Mooring** Area: The movement of Berth 1 30m south would then require new mooring points to cope with the new mooring arrangement (6 mooring bollards on the land and 1 floating mooring point to the north of Berth 1) 5 years to construct from Award in June 2021

Commencement Date: 01.07.2020; Was to be constructed within 5 years from Commencement Date; Lease Term 35 years from Commencement Date.

→ Mooring Point has been constructed and is now operational.

#### 4.6.4 Marine Licenses Carlingford Lough / Northern Ireland

##### Marine Licence ML 14\_19 Warrenpoint Harbour

Maintenance dredging of Warrenpoint Harbour area and its approaches to reinstate safe navigational and berthing depths in the period 2020 – 2022. Active License expires 31/03/2024 (c. 11km from Greenore).

##### Marine Licence ML2022003 Narrow Water Bridge Project

Application for Marine License to facilitate the construction of the Narrow Water Bridge Project (Section 2.2.4; c. 12.5km from the subject site).

##### Marine Licence ML2023023 - Carlingford Lough Greenway

Marine License for the construction of the Carlingford Lough Greenway Section from Victory Lock to the border. Active License, expires 01/03/2025.

## 4.7 Offshore Windfarms

Between May and September 2024, 4 no Strategic Infrastructure Development (SID) Applications were received by An Bord Pleanála for Offshore Windfarms in the Irish Sea. Two of these SID's, the so called "Oriel" and "North Irish Sea Array (NISA)" projects, are located in the North Irish Sea off the coast of County Louth, in the vicinity of the proposed OMF Development subject to this application. Furthermore, applications for Arklow Bank Wind Park 2 and the Codling Wind Park were submitted to An Bord Pleanála.

Each of the ORE projects comprise an offshore wind farm with associated electrical infrastructure including an onshore and an offshore substation and associated underground and subsea cables.

Oriel and NISA have identified the proposed Operations and Maintenance Facilities at Greenore Port as the potential OMF base.

A brief overview of all projects can be found below. Detailed Information and project documentation in full are available on the SID planning websites and the ABP Planning Register:

**Oriel:** [www.orielwindfarm-marineplanning.ie](http://www.orielwindfarm-marineplanning.ie) ABP Reg Ref: 319799

**NISA:** [www.northirishsearraysid.ie](http://www.northirishsearraysid.ie) ABP Reg Ref: 319866

**Arklow Bank:** [www.arklowbank2offshoreplanning.ie](http://www.arklowbank2offshoreplanning.ie) ABP Reg Ref: 319864

**Codling:** [www.codlingwindparkplanningapplication.ie](http://www.codlingwindparkplanningapplication.ie) ABP Reg Ref: 320768

### 4.7.1 Oriel Windfarm

The Project is located in the Irish Sea, off the coast of County Louth (approximately 22 km east of Dundalk town centre and 18 km east of Blackrock). The closest wind turbine will be located approximately 6 km from the closest shore on the Cooley Peninsula. The offshore cable corridor extends approximately 11 km southwest from the wind farm area to the landfall south of Dunany Point.

The Project is proposed to generate a maximum export capacity of 375 MW of renewable energy and will consist of 25 No. offshore wind turbines.

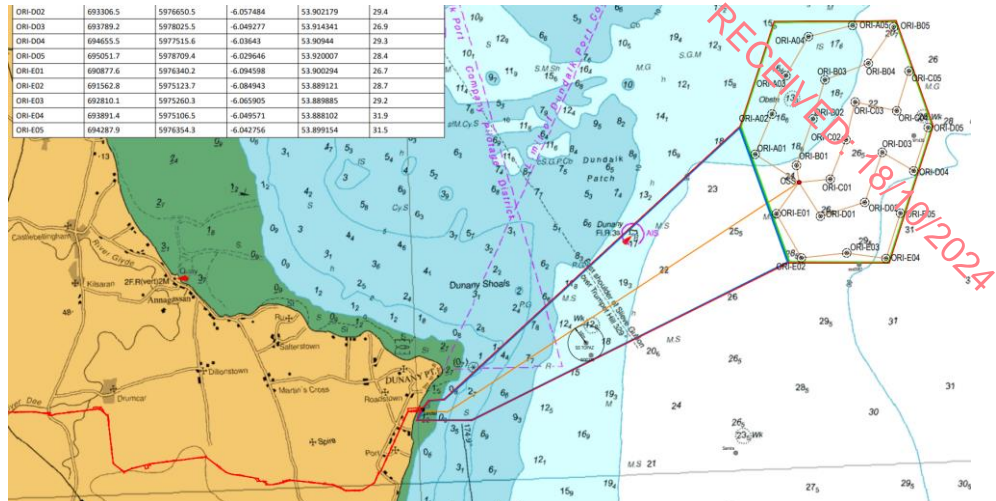


Figure 12 - Proposed layout providing for 25 turbines

#### 4.7.2 North Irish Sea Array

The offshore infrastructure of the proposed development is located off the coast of counties Dublin, Meath and Louth (approximately 25 km east of Drogheda town centre and 18 km northeast of Balbriggan). The onshore infrastructure of the proposed development is located in County Dublin (Fingal County Council and Dublin City Council administrative areas). The site identified for landfall is located north of Balbriggan immediately south of Bremore Point in the townland of Bremore.

The Project is proposed to generate a maximum export capacity of approximately 700 MW of renewable energy and will consist of 35 - 49 No. offshore wind turbines.

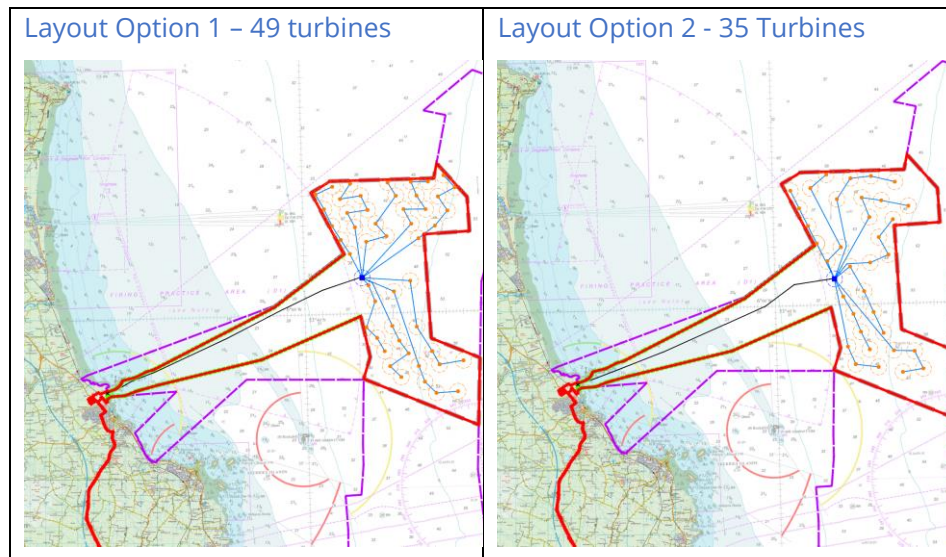


Figure 13 - Proposed Layout Options



### 4.7.3 Arklow Bank Wind Park 2

The Arklow Bank Wind Park 2 Offshore Infrastructure is located off the coast of Co. Wicklow and Co. Wexford. The site of the Proposed Development comprises an Array Area located approximately 6 km to 15 km to the east of Arklow in County Wicklow. The cable corridor extends from the Array Area to the landfall at Johnstown North, north of Arklow Town, Co. Wicklow.

The Project is proposed to generate an export capacity of approximately 800 MW of renewable energy and will consist of 47 - 56 No. offshore wind turbines.

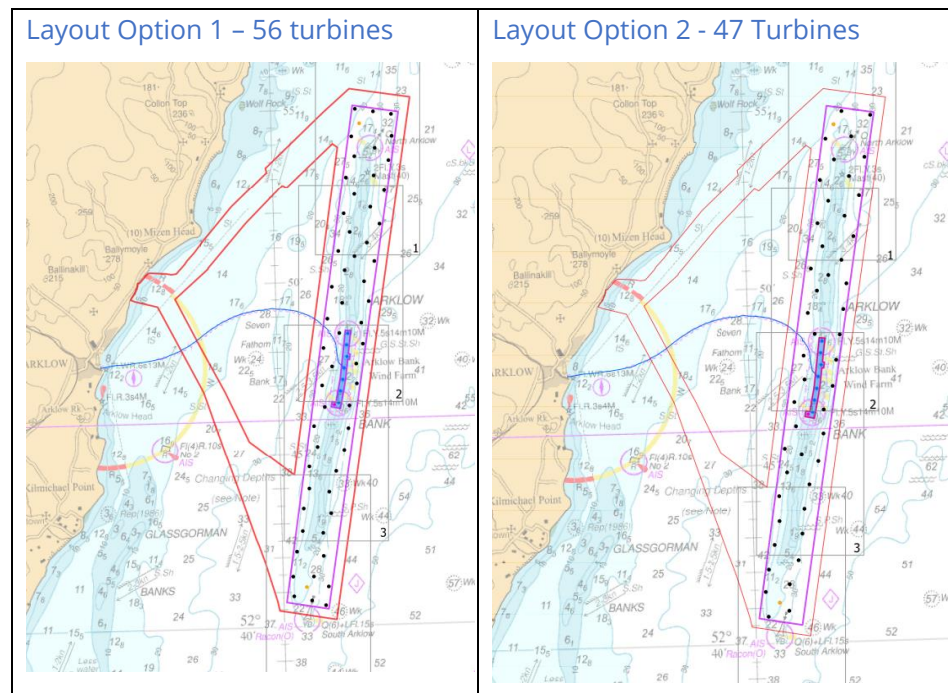


Figure 14 - Proposed Layout Options

### 4.7.4 Codling Wind Park

The proposed Codling Wind Park site is located approximately 13–22 km off the east coast of Ireland, at County Wicklow between Greystones and Wicklow Town (approximately 13 km east of Wicklow town and 15 km east of Greystones). The landfall extends across the intertidal area in the South Dublin Bay and will come onshore on the southern shoreline of the Poolbeg Peninsula on the east side of Dublin City.

The Project is proposed to generate a generating capacity of up to 1,300 MW of renewable energy and will consist of 60 - 75 No. offshore wind turbines.

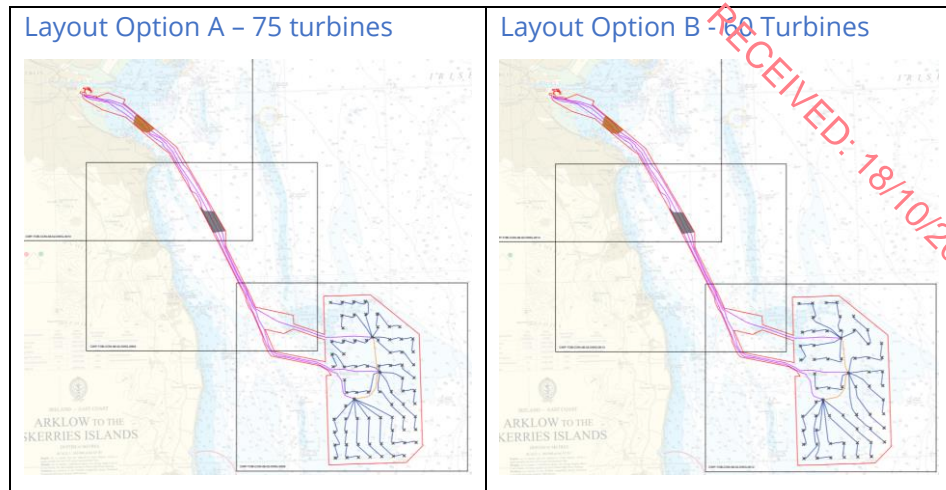


Figure 15 – Proposed Layout Options

#### 4.7.5 Bray & Kish (Dublin Array)

No application has been submitted for this development to date. The Applicant and MAC holder has requested a six month extension of the time to the date by which application for development permission must be submitted to An Bord Pleanála. The request was accepted by MARA in May 2024. Therefore, the final submission date of the respective SID application must be submitted to An Bord Pleanála by 23 December 2024.

### 4.8 Offshore Windfarm Grid Connections

#### 4.8.1 Oriel Windfarm

The project will be connected into Ireland's energy grid via a cable that will come onshore close to Dunany Point (c. 20km south of Greenore Port).

The preferred route would see the cable placed underground, mainly under public roads, to a substation about 3km to the east of Ardee where it will loop into the existing Louth – Woodland 220 kV overhead line.

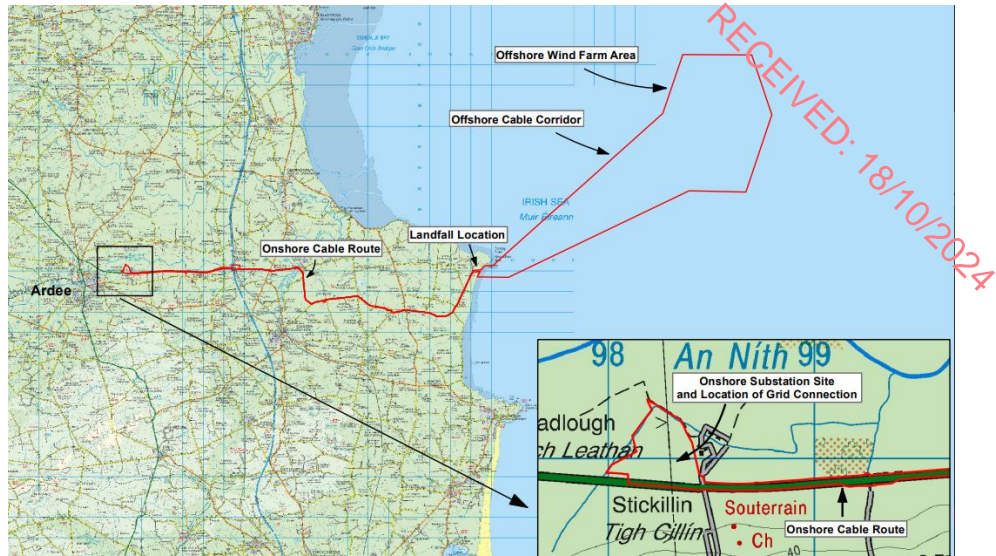


Figure 16 proposed Oriel Grid Infrastructure

#### 4.8.2 North Irish Sea Array

An area to the north of Balbriggan has emerged as the preferred landfall location (c. 45km south of Greenore Port). The project will utilise Horizontal Directional Drilling (HDD) technology which minimises disturbance along the coastline. There will be a grid facility adjacent to landfall.

The cable route below, from the north of Balbriggan to a grid connection point at Belcamp 220kv Substation, Co. Dublin is currently proposed.



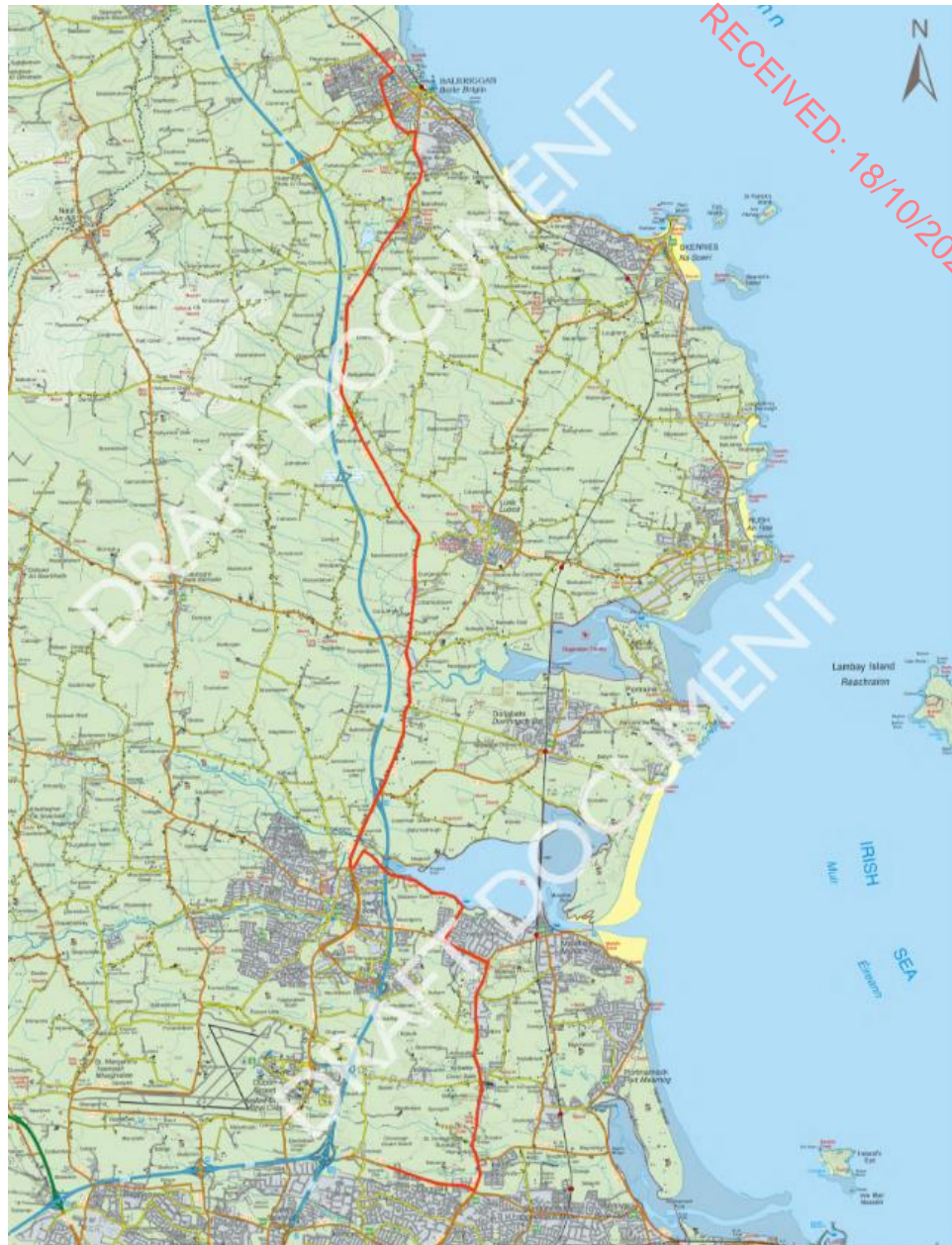


Figure 17 Proposed NISA Grid Infrastructure

#### 4.8.3 Arklow Bank Wind Park 2

In May 2022, An Bord Pleanála granted planning permission to SSE Renewables to develop the onshore grid infrastructure necessary to connect the 800MW Phase 2 of Arklow Bank Wind Park to Ireland's electricity transmission grid (SID, ABP Ref: 310090) (c. 140 km south of Greenore Port). An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of the proposed grid connection.

The development includes a new 220kV substation at Avoca River Business Park in Arklow, Co. Wicklow, with an associated connection from the new substation to the existing national transmission network. The consented

development also includes an underground cable route and associated infrastructure connecting the substation to the landfall point at Johnstown North, Arklow, where it will meet the planned subsea offshore cables connecting to the wind farm.

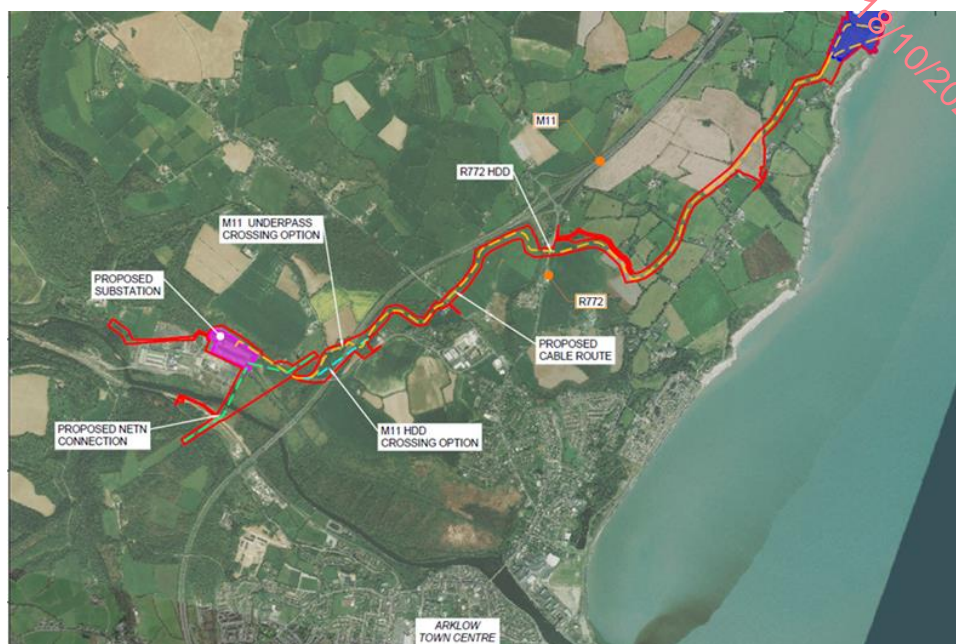


Figure 18 Arklow Grid Infrastructure

#### 4.8.4 Codling Wind Park

It is proposed to connect into the existing onshore transmission grid network at one or a combination of the following three locations:

- a. Poolbeg 220 kV substation (c. 75 km south of Greenore Port);
- ~~b. Carrickmines 220 kV substation (c. 90 km south of Greenore Port);~~
- ~~c. Arklow – Ballybeg – Carrickmines overhead line circuit (near Ballybeg; c. 135 km south of Greenore Port).~~

~~Each of the proposed connections identified above would comprise onshore works at the landfall location, underground cabling and a new substation.~~

The landfall is the onshore/ offshore interface of the project and extends across the intertidal area in the South Dublin Bay and to three underground transition joint bays (TJBs) on the southern shoreline of the Poolbeg Peninsula. Offshore export cables will be installed in ducted and non-ducted sections in this area before connecting to the onshore export cables within the TJBs.

#### 4.8.5 Bray & Kish (Dublin Array)

Two cables will be brought ashore at the preferred landfall location at Shanganagh (c. 90 km south of Greenore Port).

Two onshore transmission circuits will be installed underground connecting bringing the electricity from the landfall location to a new onshore substation connecting the grid connection point at the existing Carrickmines substation. No overhead lines are proposed.

RECEIVED: 18/10/2024

## 4.9 Dumping at Sea

There are no active or previous Dumping at Sea permits granted by the EPA in the vicinity of the proposed development.

The nearest active projects are:

Table 7 Dumping at Sea Permits

Reg. No	Facility	Description	Dump Site
S0015-03	River Boyne estuary and seaward approaches	Maintenance Dredging between the period 2021 and 2029 within the commercial estuary of the River Boyne, entrance and seaward approaches for sea disposal.	Dumping sites A1 (approximately 4 km northeast) and A2 (approximately 4 km north) offshore from the port entrance northern breakwater in the Irish Sea.
S0031-01	Malahide Marina	Dredging of accumulated sediments in marina to maintain navigability. Dredging to take place over 7 years in 3 separate campaigns each lasting approximately 25 days. Dredging via water injection dredging methodology.	Malahide Marina
S0004-03	Inner Liffey Channel and Dublin Bay	This permit authorises the loading of dredged material from the Inner Liffey Channel and Dublin Bay, arising from maintenance dredging works and the dumping of the material at an established dumping site immediately west of the Burford Bank in outer Dublin Bay. The activities involve the loading and dumping of a maximum of 3,960,000 tonnes (wet weight) of dredged material during the months of April to September from 2022–2029, or a maximum	The dump site is located west of the Burford Bank in outer Dublin Bay, approximately 6.75km offshore (from the lighthouse at the end of the Great South Wall).

Reg. No	Facility	Description	Dump Site
		quantity of 495,000 tonnes (wet weight) per annum.	
S0024-02	Inner Liffey Channel, Dublin Harbour	This permit authorises the loading of dredged material from Dublin Harbour, arising from capital dredging works under the MP2 Project and the dumping of the material at an established dumping site immediately west of the Burford Bank in outer Dublin Bay. The activities involve the loading and dumping of a maximum of 1,102,723 tonnes (wet weight) of dredged material over the period of October 2022 to December 2035.	The dump site is located west of the Burford Bank in outer Dublin Bay, approximately 6.75km offshore (from the lighthouse at the end of the Great South Wall).

1. Maintenance Dredging within the commercial estuary of the River Boyne, entrance and seaward approaches for sea disposal. (Reg No)
2. Maintenance dredging in the Inner Liffey Channel, Dublin Bay and Dublin Harbour and loading of such dredged material at an established dumping site immediately west of the Burford Bank in outer Dublin Bay, approximately 6.75km offshore from the lighthouse at the end of the Great South Wall. (Reg No, S0024-02)



## 4.10 Ramsar Sites

There are 2 no Ramsar Sites located within a 15km radius of the subject site: Dundalk Bay in the ROI and Carlingford Lough in Northern Ireland. Beyond these, the nearest site is located c 41 km northwest of the site.



Figure 19 Ramsar Sites in the Vicinity of the Subject Site

### 4.10.1 Dundalk Bay - Site No 834

Dundalk Bay Ramsar site is located c. 8.6 km south west of the subject site. It is a large exposed and shallow estuarine complex, extending c.15km from Castletown River on the Cooley Peninsula in the north, to Annagassan/Salterstown in the south. The bay is on average 4-5km in width, although the Ramsar site occupies a slightly smaller area and excludes the permanent marine waters of the bay. The site has excellent examples of marine and coastal wetlands. These include intertidal mud and sand flats, estuarine waters, intertidal marshes, sand and shingle shores. The extensive marine and coastal wetlands and the shallow nature of the wider bay provide important resources for waterbirds and make it the most important area for wintering waterbirds on the east coast of Ireland.

The site is designated as a Special Area of Conservation (SAC) under the EU Habitats Directive, as it contains representative and unique examples of coastal and marine habitats and natural wetland types within the Atlantic biogeographic region. The site is designated a Special Protection Area (SPA) under the EU Birds Directive due to the presence of nationally and internationally important populations of species listed on Annex I of the Birds Directive and/or regularly occurring migratory waterbirds. Under this designation, the wetland habitat is also protected as a resource for the regularly-occurring migratory waterbirds that utilise it. The area of the SPA is more extensive than the Ramsar site and includes the shallow permanent marine waters of the bay.

The extensive estuaries, intertidal sand and mud flats support the largest concentration of wintering waterbirds on the east coast (regularly in excess of 50,000). The coastal and marine habitats host rich faunal communities of bivalves molluscs, marine worms and crustaceans providing a key food resource for wintering waterbirds (including waders, gulls, waterfowl) which feed in the intertidal area of Dundalk Bay. As well as providing food the extensive saltmarsh areas are used as high-tide roosts by waterbirds. At night the site is used by roosting geese and swans. The shallow open waters of the bay provide foraging habitat for gulls, sea duck, mergansers and grebes.

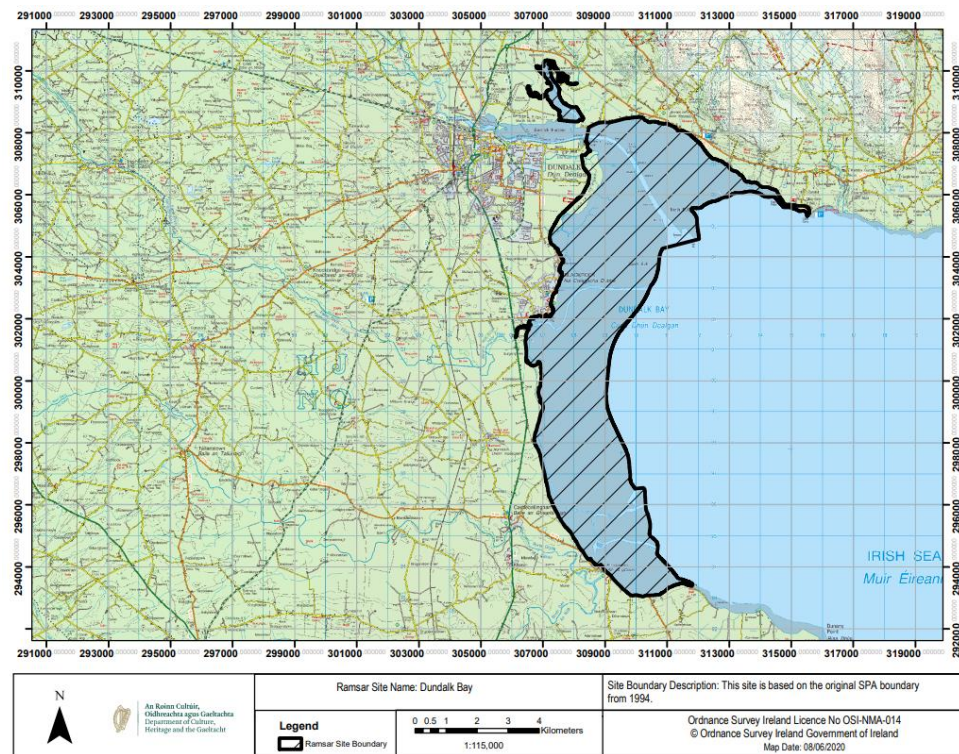


Figure 20 RAMSAR Site Map Dundalk Bay

#### 4.10.2 Carlingford Lough / Mill bay Area, Site No 936

Carlingford Lough Ramsar Site lies c. 1.5km east of the subject site on the northern shore of Carlingford Lough and includes the most significant mudflats in the lough and an area of saltmarsh. At the mouth of the lough are several small rock and shingle islands.

Carlingford Lough exhibits a range of unusual and rich littoral communities. Examples of three out of the four major intertidal sedimentary communities found in Northern Ireland are present on the site. The shore 1.5 km north from Killowen Point is a sheltered boulder shore very rich in invertebrate species. A number of normally sublittoral species occur here within the intertidal zone including the anemone *Metridium senile* (here at its only Northern Ireland intertidal location), featherstar *Antedon bifida*, the starfish *Solaster endeca* and green sea-urchin *Psammechinus miliaris*. This is the only example of this type of shore community in Northern Ireland outside Strangford Lough.



The botanical interest of this site is centred within the Mill Bay area and is related primarily to the saltmarsh vegetation located along the foreshore and to the localised but frequent beds of dwarf eelgrass *Zostera noltii* covering the intertidal mudflats. Large areas of saltmarsh are rare and under threat in Northern Ireland as most have been subjected to considerable grazing pressure or have disappeared either through natural erosion or as a result of commercial development. The Mill Bay area supports the largest remaining intact block of saltmarsh in Northern Ireland. The saltmarsh here exhibits an extremely clear and characteristic successional zonation from open mudflats to upper brackish marsh, while displaying a classic pattern of drainage channels (creeks), pools (saltpans) and hummocks. The range of saltmarsh communities found within the zonation sequence is diverse, comprising lower and middle saltmarsh communities along channels and the coastal margin, and backed by extensive expanses of brackish marsh around the mouth of the White Water River.

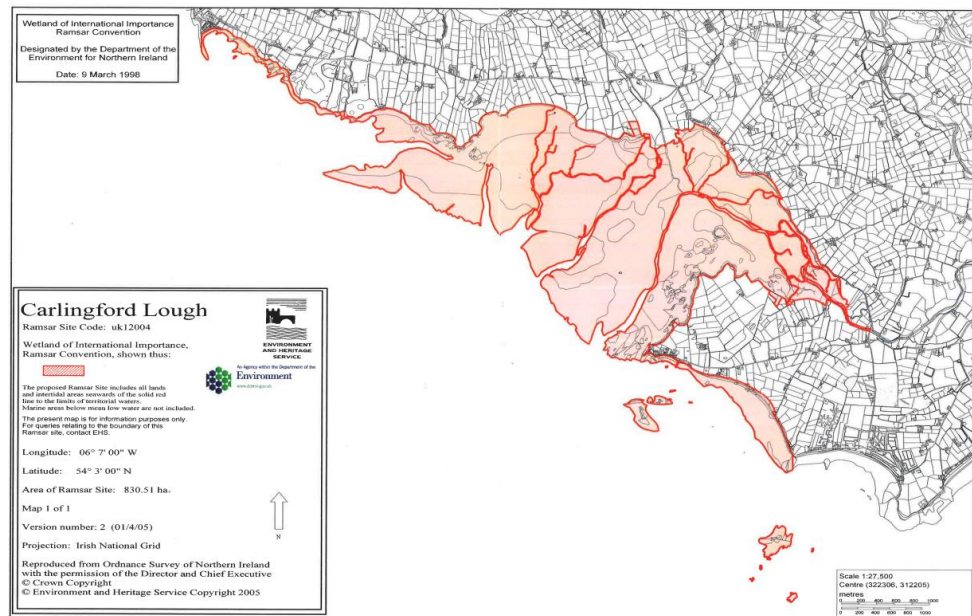


Figure 21 RAMSAR Site Map Carlingford Lough

## 4.11 Aquaculture Licenses

There is an abundance of aquaculture licences, and their locations are shown on plan at the end of this section.

### Republic of Ireland

Table 8 Aquaculture Licenses in the ROI

License ID	License Name	Species
T01-090A	Fresco Seafoods Ltd	Blue Mussel
T01-061A1	Ciaran Morgan	Blue Mussel
T01-070A1	HOLLAND SHELLFISH IRELAND	Blue Mussel
T01-074A2	Emerald Mussels Ltd	Blue Mussel
T01-066A	Emerald Mussels Ltd	Blue Mussel
T01-029B	Liam O'Connor	Blue Mussel
T01-050C	Carlingford Lough Shellfish Co-op Society Ltd	Blue Mussel
T01-103A	A. McCarthy Mussels Ltd	Blue Mussel
T01-105A	Down Mussels Ltd	Blue Mussel
T01-071A	Holland Based Shellfish International BV	Blue Mussel
T01-050A1	Carlingford Lough Shellfish Co-op Society Ltd	Blue Mussel
T01-072B1	Fresco Seafoods Ltd	Blue Mussel
T01-012	Cooley Oysters Ltd	Pacific Oyster
T01-009	Cooley Oysters Ltd	Pacific Oyster
T01-004	Keenan Oysters Ltd	Pacific Oyster
T01-023A	Keenan Oysters Ltd	Pacific Oyster
T01-008A	Carlingford Oyster Company Ltd	Pacific Oyster
T01-120A	Conan Lamph	Pacific Oyster
T01-018B	Cooley Oysters Ltd	Pacific Oyster
T01-043B	Charm Louet-Feisser	Pacific Oyster
T01-089A	Keenan Oysters Ltd	Pacific Oyster
T01-043C	Charm Louet-Feisser	Pacific Oyster
T01-025A	Carlingford Oyster Company Ltd	Pacific Oyster
T01-121A	Cooley Oysters Ltd	Pacific Oyster

License ID	License Name	Species
T01-117A	Keenan Oysters Ltd	Pacific Oyster
T01-044A	Carlingford Oyster Company Ltd	Pacific Oyster
T01-044B	Carlingford Oyster Company Ltd	Pacific Oyster
T01-043A	Kian Louet-Feisser	Pacific Oyster
T01-024	Keenan Oysters Ltd	Pacific Oyster
T01-018A	Cooley Oysters Ltd	Pacific Oyster
T01-020	Cooley Oysters Ltd	Pacific Oyster
T01-021	Cooley Oysters Ltd	Pacific Oyster
T01-026A	Keenan Oysters Ltd	Pacific Oyster
T01-019	Cooley Oysters Ltd	Pacific Oyster
T01-060A1	Hugh McCrum	Blue Mussel

## Northern Ireland

Table 9 Aquaculture Licenses in NI

AFFNI No	Name	Species
AFFNI 27	Carlingford Lough Mussels Ltd	Mussels
AFFNI 104	Lenger Seafoods Ireland Ltd	Mussels
AFFNI 94	Emerald Mussels Ltd	Mussels
AFFNI 100	Deepdock Ltd	Mussels
AFFNI 103	Lenger Seafoods Ireland Ltd	Mussels
AFFNI 99	Deepdock Ltd	Mussels
AFFNI 12	Down Mussels Ltd	Mussels
AFFNI 73	Killowen Shellfish Ltd	Pacific Oyster
AFFNI 92	Millbay Oysters	Pacific Oyster
AFFNI 105	Cahir Linn Oysters Ltd	Pacific Oyster
AFFNI 106	Cahir Linn Oysters Limited	Pacific Oyster
AFFNI 49	Greencastle Shellfish Ltd	Mussels

AFFNI No	Name	Species
AFFNI 89	Stephen O'Hare	Pacific Oyster
AFFNI 84	Greencastle Oysters	Pacific Oyster

The Department of Agriculture, Environment and Rural Affairs (DAERA) as the responsible department for licensing all aquaculture establishments in Northern Ireland is in receipt of three applications for new aquaculture licenses in the **Mill Bay area, Carlingford Lough**.

Table 10 Applications for new aquaculture licenses in the Mill Bay Area, Carlingford Lough

Name	Species	Size
Mr Patrick Carvill	Pacific Oyster	16.7 ha
Mr Darren Cunningham	Pacific Oyster, Blue Mussels	49 ha
Rooney Fish	Pacific Oyster, Native Oyster	168 ha

A Habitat Regulation Assessment has been prepared and concludes:

- d. The proposed new aquaculture sites within the Mill Bay area of Carlingford Lough will not result in a significant decrease in breeding Tern population numbers.
- e. The proposed new aquaculture sites within the Mill Bay area of Carlingford Lough will not result in a significant decrease in the Light Bellied Brent Goose population numbers.

[Consultation on new aquaculture applications in Mill Bay | Department of Agriculture, Environment and Rural Affairs \(daera-ni.gov.uk\)](#)

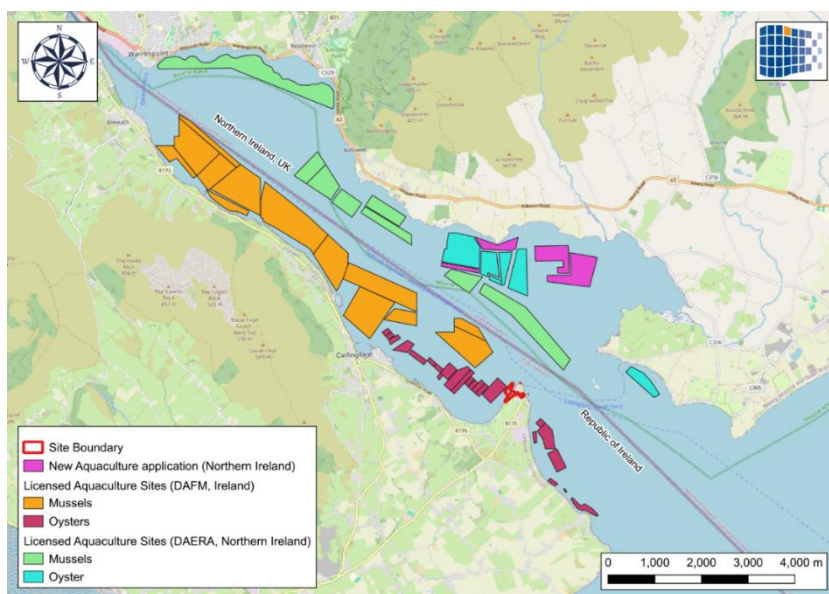


Figure 22 Aquaculture Licenses Carlingford Lough

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# **APPENDIX 4.1**

## **Risk Assessment for Shellfish Aquaculture**

### **VOLUME III**

#### **APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

**MAY 2024**



MERC Consultants  
environmental and conservation services

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# Proposed development at Greenore Port, Carlingford Lough.

*- Risk Assessment for shellfish aquaculture -*

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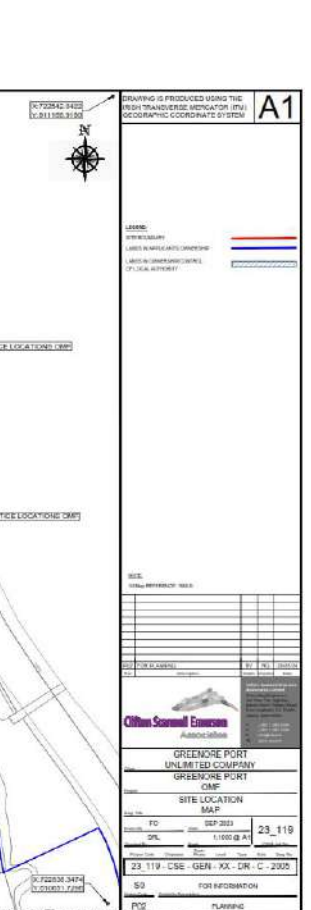
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## 2. Methodology

The assessment has been completed as a desk study. In that regard, a literature review phase has accessed relevant environmental reports and data, aquaculture data for Carlingford Lough, mapping and development plans, as well as ecological information in relation to oyster and mussel aquaculture and the overall area of proposed project.

The principal sources of data included:

- Greenore Port Company
- Ordnance Survey Ireland (mapping)
- Bingmaps (aerial imagery)
- Department of Agriculture Food and Marine (aquaculture licensing)
- Department of Agriculture, Environment and Rural Affairs (NI)
- An Bord Iascaigh Mhara
- Loughs Agency
- National Parks and Wildlife Service
- Shellfish Sanitary Survey (Aquafact, 2021)
- Marine Institute

Scientific publications in relation to bivalve shellfish and marine invertebrate ecology were accessed via online searches and downloaded material. Further online searches were carried out to inform and update the understanding of current shellfish farming practices. Further information regarding potential impacts on culture activities that may be associated with foreshore infrastructure developments adjacent to shellfish culture operations was identified and reviewed.

## 3. Description of aquaculture activities in Carlingford Lough

Carlingford Lough is an important area for production of bottom (sub-tidally) grown mussels (*Mytilus edulis*) as well as Pacific oysters (*Crassostrea gigas*), the latter being grown on off-bottom trestles on the intertidal foreshore. Farming activity takes place within both the Northern Ireland and Republic of Ireland jurisdictions and agreement between both administrations has facilitated aquaculture licensing by Department of Agriculture, Food and Marine and the Department of Agriculture, Environment and Rural Affairs (NI).

Both mussels and oysters are produced to serve domestic as well as export markets and are destined for fresh markets; while some proportion of both mussel and oyster production also enters the processing / value added sector within Ireland for domestic and export consumption.

Presently, trestles placed on the intertidal foreshore are used for off-bottom culture of oysters; while blue mussels are cultured extensively by relaying harvested mussel seed on the bed of the Lough and by dredge harvesting the market sized mussels at a later stage.

BIM (2023) reports total oyster production for 2022 for the northeast of the Republic of Ireland as 763t, with a reported value of €4.592m. Most of this production comes from 4 large farming units located in Carlingford Lough. Total employment is estimated at 57 full time positions (or equivalent).

Production of seabed cultured mussels for the northeast of the Republic of Ireland in the same year amounted to 2,260t with an estimated value of €3.5m. Output was from 5 large farming units located in Carlingford Lough. Total employment is estimated at 42 full time positions.

Mussel producers are licensed to relay mussel seed on licensed aquaculture sites in Carlingford Lough. Those sites located on the south side of the main navigation channel are subject to licensing by DAFM, while aquaculture sites located on the northern side of the navigation channel are subject to licensing by DAERA. In the case of the mussel industry there are strong cross border company linkages and aquaculture vessels operate on multiple sites within both jurisdictions.

Carlingford Lough also hosts a well-developed oyster aquaculture sector. Oyster aquaculture activity occurs on licensed sites located on the intertidal foreshore on both the northern and southern sides of Carlingford Lough.

Oyster farming within Carlingford Lough is a form of semi-intensive culture which has been taking place on the intertidal foreshore in different parts of the lough since the early 1970's. Cultivation of the Pacific oyster is mostly carried out by growing oysters in plastic mesh bags, attached to series of steel trestle frames. The particular trestle design utilized in different parts of the lough varies depending on location. The trestles most commonly in use measure 3m x 1m and stand 0.4 – 1.2m in height, depending on the part of the foreshore where they are located. Trestles normally hold 6 mesh bags laid out on and attached to the trestle surface using rubber strap and hook fasteners. Mesh size of bags varies depending on the grade of the stock they hold. Typically, bags are either 6mm, 9mm or 14-16mm.

Many of the sites are located on the Republic of Ireland (southern shore) side of the lough, in close proximity to the proposed development project at Greenore Port. Additional oyster aquaculture activity occurs on the northern shore of the lough in NI waters. The overall distribution of licensed aquaculture sites (DAFM) within Carlingford Lough is shown in Fig. 2a, while Fig 2b presents type and status of aquaculture licences as issued or in application stage with DAFM. Fig 1.2c presents type and status of aquaculture licences as issued or in application stage with DAERA.

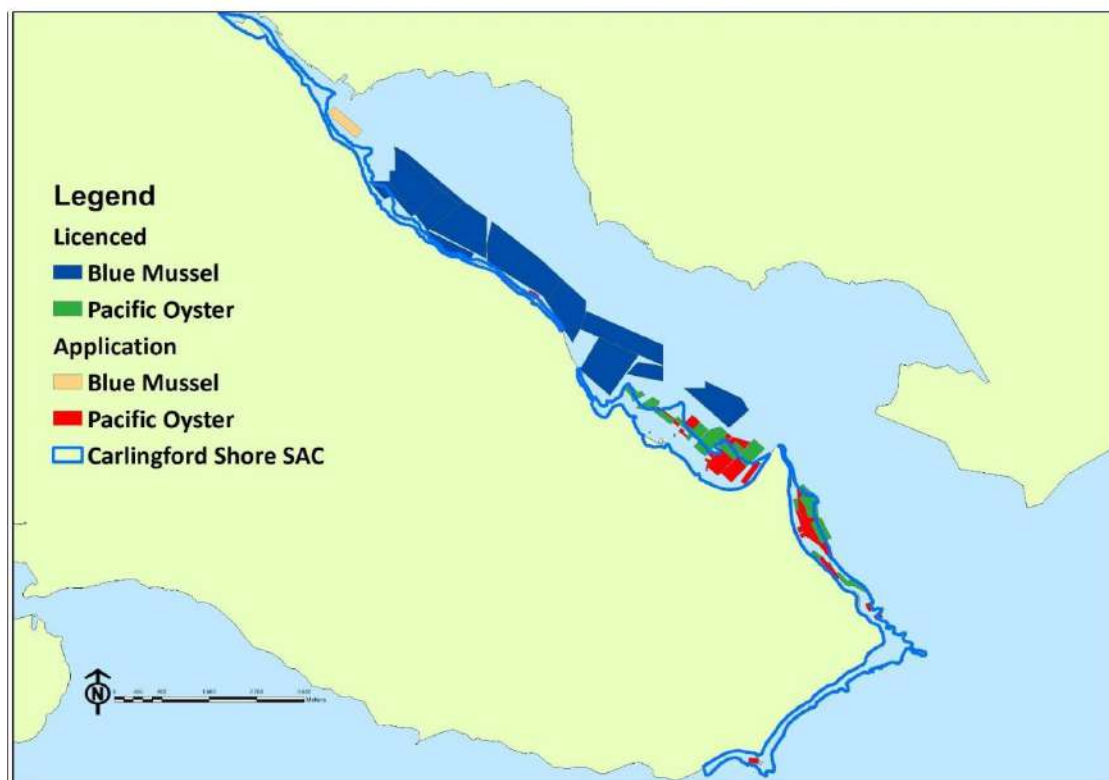
In the Republic of Ireland sector of the lough, there are licensed aquaculture sites immediately adjacent to Greenore port. Pacific oyster culture takes place on the intertidal foreshore within 100m of the proposed project site, to the east. Bottom mussel culture takes place approximately 500m east of the port area and extends for much of the southern side of the lough.

In the Northern Ireland sector, there are bottom mussel as well as oyster culture sites to the north of Greenore port and the proposed project area, on the northern side of the navigable channel. The closest of these is circa 950m directly opposite the project area, where mussels are cultured on the seabed.

Aquaculture sites located adjacent to and near the proposed development site at Greenore Port are detailed further in Fig 3. An Expanded view of the licensed aquaculture sites adjacent to Greenore Port is given in figure 4.



**Fig 2a.** Location of aquaculture sites (blue polygons) Carlingford Lough as licensed by DAFM. (Source: DAFM Aquaculture map viewer, accessed March 2024)



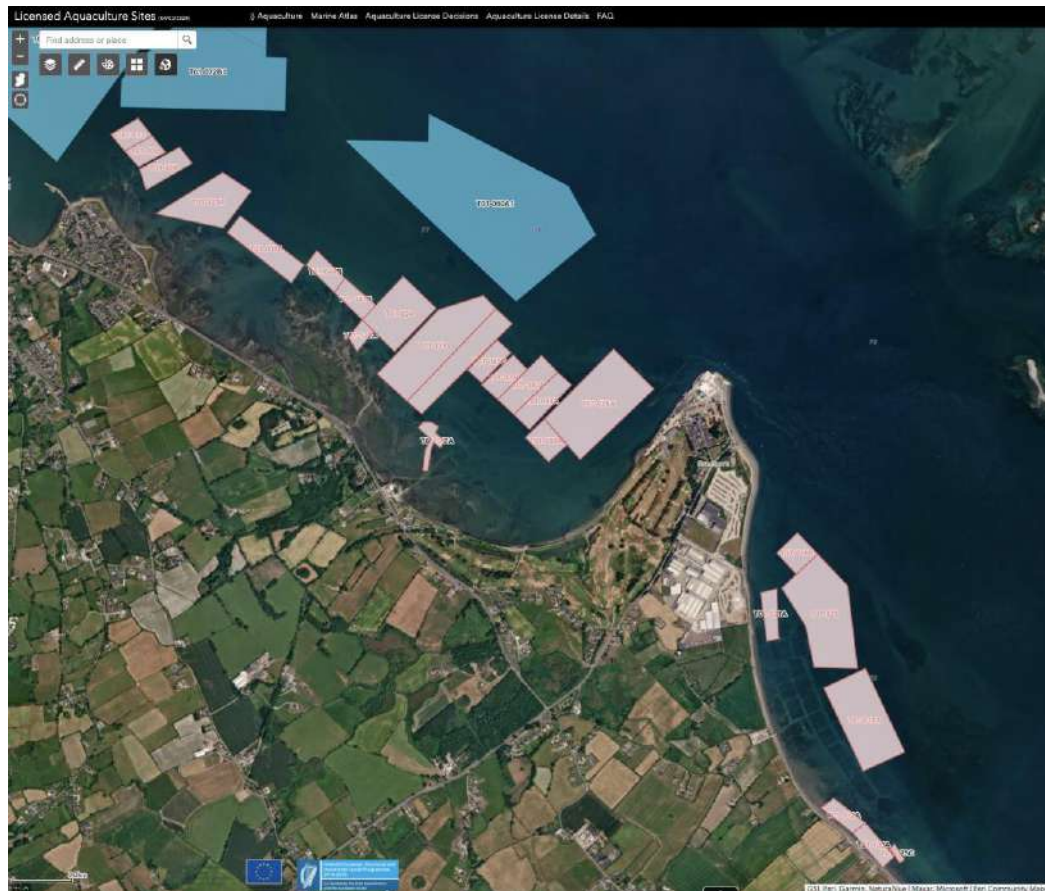
**Fig 2b.** Type and status of DAFM aquaculture licences, Carlingford Lough. (Source: Marine Institute, 2022)





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**Fig 3.** Licensed aquaculture sites in Carlingford Lough – DAERA (NI). Sites indicated in Green. PO= Pacific oyster, M=Mussels. Proximity to Greenore port is indicated (meters). (Source: DAERA).



**Fig 4.** Expanded view of licensed aquaculture sites adjacent to Greenore Port. Pink polygons = Pacific oysters *Magallana gigas*, blue polygons = Blue mussel *Mytilus edulis*. (Source: DAFM Aquaculture map viewer, accessed March 2024).



Marine Institute (2022) provides considerable additional information in relation to aquaculture activity in Carlingford Lough and the reader is referred to it for further information in relation to aquaculture and husbandry practices in Carlingford Lough. For the purposes of informing the risk assessment, the key criteria in relation to aquaculture are geographical location of licensed sites and type of activity (species, culture method). These data are open access – mostly via the [DAFM aquaculture web viewer](#).

## 4. Description of Development

The proposed project will deliver an offshore wind Operation & Maintenance Facility within the existing port environment at Greenore. The facility is seen as a development that is necessary in order to enable and support strategic plans for development of Offshore Renewable Energy in the north-western Irish Sea.

### 4.1 Construction: Summary of Shoreside Development

The proposed project entails significant shore and shoreside works including:

- Development of an Operation and Maintenance facility
- Parking areas
- Port office and buildings upgrade
- Communications mast
- Landscaping / boundary treatment
- Lighting installation
- Ancillary works e.g. ESB Sub-station, waste management area, Fuel / bunker store (>200,000).

In summary extensive shoreside works will see construction of 3 no. 1700 m<sup>2</sup> warehouse & office units, associated parking and services, 65m of quay wall upgrades & pavement as well as satellite parking & public realm upgrades, ancillary works.

### 4.2 Construction: Summary of Maritime Development

Marine works to be implemented will entail capital dredging works as well as piling and works related to construction of additional quay wall berthage, installation of piled breakwater pontoons for crew transfer vessel (CTV) berthing, floating pontoon berthage and a linkspan bridge. To expand the area available for the additional installations and port operations, it is proposed that up to 50,000m<sup>3</sup> of seabed material be dredged from within the existing port area.

Further details in relation to the proposed development are provided as follows:

- Dredging c.50,000m<sup>3</sup> of mainly soft silt and sand sediments, but also including c.1,000 m<sup>3</sup> of rock, from the seabed within the existing port area
- Improvement works to the existing Berth 3 quay wall for approx. 70 linear meters length. This will include a new quay wall face and upgraded deck. The new quay wall to be a steel pile closed face wall and replace the existing caisson berthing face.
- 220m of new breakwater pontoons, 5-6m wide to accommodate crew transfer vessels (CTVs). Pontoon arrangement to facilitate 9 no. CTV berths comprising 5 no. 24 pax vessel and 4 no. 12 pax vessels. There are also 2 no. layby berths for 12 pax vessels proposed for the outer (southern) side.
- A 40m access ramp to provide access from a newly extended quay wall.

The element of the proposed development likely to present the greatest potential to impact the shellfish aquaculture industry are the proposed dredging works. Dredging of marine sediments is often associated with resuspension of sediments with resulting increased turbidity, depletion of dissolved oxygen levels, sedimentation as well as potential to release contaminants previously trapped within harbour sediments, especially where works take place within ports or harbours. Other elements of the proposed project entail extensive shoreside works, quayside berthage construction along with piling of the seabed and installation of floating pontoons. These latter works are all planned for within the existing port environment and as such are highly unlikely to generate impacts that could be significant to the shellfish aquaculture producers operating within the immediate vicinity or further afield. Accordingly, dredging works are considered to present the greatest potential to negatively impact the shellfish aquaculture activity within Carlingford Lough and as such are the main focus of the risk assessment from this point on.

#### 4.2.1 Details of proposed dredging campaign

Proposed capital dredging of the seabed is required between the existing groyne, Berth 2 and proposed Berth 3. The depth in this dredge pocket will be -4m OD. This depth is suitable for the proposed CTV vessels. The dredge material will comprise of approximately 45-50,000 m<sup>3</sup> of soft dredge arisings (gravel, silt, sand, clay) with possibly up to 1,000 m<sup>3</sup> of rock dredge arising. The location of the proposed dredging works is shown in Figure 5.



**Figure 5.** Greenore port - proposed area to be dredged (indicated in blue) within the existing port area.  
(Source: McCarthy Browne Consultants)

Dredging will be carried out using a backhoe dredger mounted on floating pontoons. The dredger will deposit the dredge material into a hopper barge which will be towed to the quayside. Material will be unloaded out of the hopper barge by an excavator standing on the quay side and placed in a temporary bund for onward transfer to a licenced disposal facility by heavy goods vehicles.

The construction programme estimates that between 8 and 10 weeks will be required to complete the entire dredging phase. It is proposed that a haulage contractor would dispose of the material over 12 working hours per day Monday – Friday and over 6 working hours on Saturdays.

The existing rock armour supporting the breakwater at the outer edge of the dredging area will be repaired / strengthened during the dredging process, as and where the need is identified during the dredging works. The purpose of the breakwater is to create a safe wave environment for shipping, which will be of additional benefit to the lighter craft (CTV's) utilising the port. The breakwater also creates a natural 'self-scouring' port and as a result, a regular maintenance dredging programme will not be required and is not proposed.

#### 4.2.2 Description of materials to be dredged

The seabed within the area between the breakwater and the quay is relatively uneven and appears to be comprised of pockets of deeper accumulations of mud, in a mosaic with areas of gravel, cobble and rock. Coarser sands appear to have accumulated in a pocket towards the southern end of the breakwater, perhaps indicative of an area of deposition.

Dredge material will comprise mainly 'soft' dredge arisings (gravel, silt, sand, clay) as well as rock breakings where rock needs to be removed to lower the seabed. See Table 4.1 for an approximate breakdown of the dredge material. All soft volumes will be removed for offsite reuse, recovery, recycling and / or disposal due to limited opportunities to re-use on site.

**Table 1.** Materials arising

Material	Volume (m <sup>3</sup> ) *	EWC Code
Soft dredge arisings	45-50,000	17 05 06
Rock dredge arisings	1,000	17

\*Maximum total predicted dredge volume is 50,000 m<sup>3</sup>

MERC (2022) completed a grab survey of surficial harbour sediments from the area within the breakwater as part of benthic ecological investigations in support of planning consent process. A total of seven (7) subtidal samples were collected by Day grab during 2022. Grab penetration was a maximum of 20cm. Figure 6 shows the location of samples collected. Particle Size Analysis from each sample obtained confirmed that sediments at stations 1 and 2 were defined as sandy gravel, with high percentages of gravel (>40% of particles over 2mm), coarse sands and a low amount of fine sands and silt/clays. Total organic carbon was correspondingly low. Stations 3-7 were less gravelly and contained finer sediments than those sampled at stations 1 & 2. Fine, very fine sands and silt/clay comprised the majority of the sediments at these stations. Total organic carbon was higher at these stations and a maximum of 8.41% was recorded at station 3. Stations 3, 4 and 7 can be defined as sublittoral mud, while stations 5 & 6 comprised mixed sediments, generally coarser sands and gravels with a low fraction of fines present. A strongly anoxic odour is recorded for samples collected from stations 3,4,6 and 7, consistent with a higher organic carbon / anaerobic conditions associated with sediments with a significant proportion of fines (fine sands/muds) present. Several attempts to collect grab samples at some stations failed (Figure 1.5). Most likely this was on account of the hard nature of the seabed at these locations with cobbles - which prevent the grab from closing fully – being present.

It is apparent that the greater volume of dredge material to be extracted will come from the southern end of the harbour area (as indicated in Figure 1.4). Evidence from the grab survey indicates that this area is characterised mainly by coarser sands and gravels, cobble and bedrock. The areas with finer sediments as shown in Figure 6 are, for the most part, outside of the proposed dredge campaign.

Accordingly, it is considered highly likely that the majority of dredge material will comprise sands and coarser materials, while some mud and silt component is present in the harbour area also, these sediments do not comprise the majority of the material to be dredged. It should be noted that the grab survey results can only be seen as indicative as penetration is relatively low, and sediment fractions in deeper strata could be significantly different from those observed in surficial sediments at stations sampled.



**Figure 6.** Greenore port – Location of grab samples collected.

## 5. Shellfish aquaculture *zone of potential impact* and description of risks

A total of 16 no. licensed aquaculture sites are known to occur within a 1,5 km radius of the project site at Greenore port. Licences relate to shellfish aquaculture, especially of Pacific oyster. A Blue mussel farm has been confirmed within the 1.5km radius, with more mussel and oyster farms outside the of this radius from the project, especially in the direction of Carlingford Bay.

The first step in assessing risks to shellfish production is to identify those licenced aquaculture sites that may be impacted by the proposed development on the basis that they are likely situated within an area that may be subject to one or more effects from the proposed project. This area is referred to as the *potential zone of impact*. This area has been identified by applying a *Source-Pathway-Receptor* model. As part of the process, project phases and the various proposed works described in section 4 were evaluated to identify the scope and mechanism/s by which the proposed project could affect shellfish aquaculture activity. This has been accomplished by determining whether an impact source together with a likely or potential pathway exists between the source (works and project site) and the receptor (licensed aquaculture sites).

This stage of the assessment has allowed for development of a detailed understanding of potential risks to shellfish aquaculture, the mechanism (pathway) by which any risks may be transferred, as well as the geographical extent of identified potential risks (zone of potential impact). The assessment has included construction and operation phases of the project. Results of this analysis are summarised in Table 2.



**Table 2.** Assessment of potential zone of impact intertidal aquaculture of shellfish in Carlingford Lough.

Source	Path	Receptor	Area of potential impact relative to sensitive receptors	Rationale for assessment of area of impact
<b>Construction:</b> Capital dredging of the port area; installation of extension to quay wall; installation of new floating pontoon berthage and associated service infrastructure				
Dredging: local resuspension of sediments and increased sedimentation rates on intertidal / subtidal foreshore	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending out to 1000 meters radius to allow for sediment plume dispersion effects	Potential for sediment dispersion due to dredging technique and likely nature of sediments at some locations, tidal dispersion effects, assessed nature and volumes of dredge fractions. Evidence from previous dredging campaign at Greenore port.
Dredging: Transport of sediments, particularly of finer fractions, and release of contaminants to other areas, resulting possibly in an increase of contaminant concentrations, most notably TBT/DBT	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending out to 500 meters radius to allow for dispersion and sediment plume	Localised potential impact limited to waters and foreshore directly surrounding the dredging site due to tidal induced mixing and dispersion.
Dredging: consumption of oxygen resulting in reduced oxygen saturation of the water body	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending to 500 meters radius to allow for dispersion and sediment plume	Localised potential impact limited to waters and foreshore directly surrounding the dredging site due to tidal induced mixing and dispersion.
Dredging: Reduced transparency of the water column resulting in reduced primary production and food availability	Sediment	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending to 500m meters radius to allow for dispersion	Localised potential impact limited to waters directly surrounding the dredging site due to tidal induced mixing and dispersion.
Construction of quay wall extension and installation of floating pontoon berthage: release of fine sediments and dust into the water column	Water and air	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius up to 200 metres depending on wind conditions and direction.	Considered appropriate and proportionate relative to proposed construction methods. (CEMP)
Dredging and construction works: physical obstruction by vessels and plant	Presence of plant/machinery on areas of the foreshore subject to aquaculture licensing	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	<100m	Considered appropriate and proportionate relative to small spatial scale of development area and proposed construction technique.
Dredging and installation of quay wall extension and floating pontoons:	Water	Economic operation of aquaculture sites, live shellfish stock held in	Extending to 1000m within the waterbody from source	Considered appropriate and proportionate relative to small spatial

Source	Path	Receptor	Area of potential impact relative to sensitive receptors	Rationale for assessment of area of impact
contamination/pollution of water body by hydrocarbons/liquid contaminants		trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.		scale of development, associated plant and vessels required, potential for dispersion of contaminants in the water body
Dredging and Installation of quay wall extension and installation floating pontoon berthage: Introduction of Invasive Alien Species (IAS)	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	IAS: Carlingford Lough	Considered appropriate and proportionate relative to spatial scale of development and overall development project activities
Construction of new quay wall and floating pontoon berthage: loss / damage to adjacent licensed intertidal aquaculture sites	Installation of infrastructure, dredge spoil, construction debris, obstruction by plant and/or vessels	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of (unplanned) loss or damage loss	Unplanned/unforeseen impacts of this nature will be limited to area of direct loss or damage.
<b>Construction: Land side development of new port facilities</b>				
Construction of new port facilities: Pollution: Accidental spillage of hydrocarbons or cementitious material (land side), dust, contaminated water.	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Extending to 1000m radius from source	Considered appropriate and proportionate relative to small spatial scale of development, associated plant and vessels required, potential for dispersion of contaminants in the water body
Demolition of warehouse, stripping, breaking, removal from site - dust arising from demolition activities	Sediment, Air	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius up to 200 metres depending on wind conditions and direction.	Depending on wind and tidal conditions, dust may be blown onto intertidal foreshore.
Piling – quay wall and pontoon breakwater piling giving rise to noise and vibration	Water, Air	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius Up to 500 metres (air) depending on wind conditions and direction, 2km in water.	Enhanced propagation of noise and vibration in medium of water
Contaminated water flowing into the designated sites stemming from demolition works	Sediment, Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Up to 200 metres radius depending on tidal conditions	Depending on weather conditions, surface runoff may transport contaminated material into licensed aquaculture areas.
<b>Operation: Presence of new pontoon</b>				

Source	Path	Receptor	Area of potential impact relative to sensitive receptors	Rationale for assessment of area of impact
Presence of new pontoon: introduction of IAS from visiting vessels	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity..	Direct footprint of pontoon extending out to entirety of Carlingford Lough	Considered appropriate and proportionate relative to the spatial scale of the pontoon area and understanding of likely vessel traffic levels using additional berthing provided.
Presence of new pontoon: Pollution (waste, sewage and accidental spillage of hydrocarbons)	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius of 250m	Considered appropriate and proportionate relative to small spatial scale of the pontoon area and potential for limited berthing facilities.
<b>Operation: Port activities</b>				
Increased port activity: Pollution (waste, sewage and accidental spillage of hydrocarbons)	Water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius - Waste, sewage: < 100 meters. Hydrocarbons: 500m (Small scale accidental spillage from crew transfer vessels)	There are existing and proposed new facilities/management for wastewater and sewage arisings. Existing port management measures address accidental spillage of hydrocarbons. Management controls prevent sewage and hydrocarbon release. Management response to incidents leading to contamination of the waterbody and/or foreshore are designed to limit impacts.
Increased port activity: Noise	Air & water	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	100m	Not significantly greater than existing levels for disturbance at the Port. Considered appropriate and proportionate relative to small spatial scale of the proposed project. Bivalve shellfish not known to be sensitive to waterborne noise.

## 5.1 Previous marine works at Greenore Port

Marine works were previously carried out in at Greenore Port at various times since 2015.

In March 2011 Greenore Port were granted a Foreshore License to remove two rock outcrops from the seabed of a quayside berth in order to facilitate docking for larger cargo carrying vessels. This work was largely undertaken from February to April 2015. In June 2016 Greenore Port Company sought permission for the extension of Berth 1 southwards by 30m and the installation of a floating mooring buoy. The works required the removal of approximately of a further 1115m<sup>3</sup> of rock and associated sediments. The berth extension to Berth 1 also required the installation of a floating mooring point to the north of the berthage pier. Works were completed in 2020.

Information in relation to the relevant foreshore lease, consultations, environmental data and consent process is available at [Department of Housing, Local Government and Heritage - Greenore Port](#). The information was reviewed during the completion of the present assessment.

## 5.2 Proposed port development – potential impacts for aquaculture production

The following paragraphs describe in general terms the potential impacts that the proposed project may present to shellfish aquaculture. The information provided is descriptive and is mainly generic. It is not intended to imply that any or all potential impacts will arise as a consequence of the proposed development at Greenore port.

### 5.2.1 Resuspension of sediments and release of toxic and/or harmful compounds

Re-suspension of fine sediments through dredging campaigns can lead to an increase in turbidity. Potential impacts can include dispersal of sediments and associated contaminants to surrounding areas and remobilization of contaminants in the water column, thereby enhancing their bioavailability and associated ecotoxicological risks. Release of trapped nutrients can contribute to an increase in eutrophication effects with direct impacts on organisms (including aquaculture stock) due to reduced water transparency and elevated consumption of oxygen, as substances which consume oxygen (e.g. nutrients and harmful materials) bonded to the sediments are released into the water column and thus reduce its oxygen content. However, effects associated with resuspension of sediments are generally short lived in marine areas with regular flushing and moderate or high levels of tidal exchange.

Contamination of harbour sediments with organotin (tributyltin, dibutyltin) compounds is common. Contamination is a direct result of shipping activity at the port and the leaching of organotin compounds from anti-fouling hull paints used on vessels in the past. The use of TBT / DBT is now banned internationally, meaning that the presence of TBT/DBT contamination in sediments relates to previous use of the port by vessels painted with organotin antifouling compounds.

Prior to conducting previous dredging works, sampling of marine sediments at Greenore port for analysis and determination of the presence of a range of persistent toxic compounds was conducted, most recently in 2010. Results of analysis of six (6) samples collected from the seabed within the harbour area revealed that sediments at three sampling points were moderately contaminated with organotin (Tributyltin/Dibutyltin) (NLS, 2010). Following the classification system recommended in the Marine Institute's *Guidelines for the Assessment of Dredge Material for Disposal in Irish Waters (April 2006)*, two of these samples tested are categorised as Class 2 (Marginally Contaminated) and one of the samples was categorised as Class 3 (Heavily Contaminated).

Given the previous findings of analysis, it is highly likely that tributyltin and dibutyltin contaminated sediments are still present at Greenore port. It is possible that contaminated sediment will be disturbed during roll out of the project, most likely during the proposed dredging campaign. Disturbance of sediments during dredging could lead to contaminated sediments being resuspended into the water column, with sediments being dispersed and redeposited over a wider area.

#### 5.2.2 Sedimentation

Dredging dislodges and resuspends bottom sediments where they are not all captured by dredge-head or backhoe bucket movements. Resuspended harbour sediments may be advected away from the dredging site in the form of a dredging sediment plume. The plume is representative of increased suspended solid load and can vary in extent both spatially and temporally depending on criteria including the type of sediments and the environmental conditions (weather/tide/hydrodynamics) and dredging technique. Ultimately, resuspended sediments will in time be redeposited at a point where the conditions are not such that they are kept in suspension. For example, they may be carried ashore by waves or may settle out of the water column at a point where current velocities allow them to do so. Potentially, sedimentation may occur on shellfish beds or aquaculture facilities if the dredging campaign is not designed to avoid effects associated with sedimentation.

#### 5.2.3 Accidental release of hydrocarbons, chemical spills, cementitious material

The assessment has identified potential for accidental spillage of hydrocarbons associated with small vessels, jack-up barges, dredging and construction plant which will be required to operate in the proposed project area during various stages of completion of the project. Accidental spillage of hydrocarbons and cementitious material has the potential to impact the areas under oyster and/or mussel cultivation where volumes released are large and/or where aquaculture sites are close to the point of release (Greenore port). Effects of tide and wind may cause dispersion of spilled material over a wider area.

#### 5.2.4 Introduction of alien species (IAS)

Small vessels (not covered by MARPOL regulations) and plant working moving to the site from other marine areas can potentially transport alien species and lead to the introduction of marine IAS to Carlingford Lough if not sufficiently decontaminated / antifouled and/or cleaned before entering the project area. While the risk of introduction of IAS with potential to harm aquaculture is considered low, it is not insignificant. BIM (2023) has produced a guide to understanding, preventing, and managing risks of IAS to aquaculture in Ireland. Further details in relation to the presence and risks to aquaculture in relation to marine IAS are available via the [BIM website](#). For the purposes of this report it is sufficient to understand that introduction of new IAS species to Carlingford Lough could impact the aquaculture industry by affecting operational profitability and ultimately, the viability, of aquaculture enterprises, including shellfish production areas. Accordingly, the risks of introduction of additional IAS must be managed.

#### 5.2.5 Obstruction of aquaculture sites, damage to foreshore/aquaculture installations

Marine works on the foreshore can present risks to other users of the foreshore. For aquaculture operations in the intertidal, reduced access to sites, damage to equipment, shellfish beds or access routes as well as presence of debris or dredge spoil on the foreshore can affect operations as well as overall safety of workers and equipment. Associated impacts may manifest in a wide range of ways including increased overall operational costs, reduced access, alteration of farming operations and/or stock management practices. A similar range of impacts can arise for subtidal culture operations including extensive mussel cultivation. Clearly, impacts can also serious safety considerations for all users and need to be carefully considered and managed during project development.



#### 5.2.6 Increases in port traffic and associated noise and vibration

During the construction and operational phases, risks of pollution of the water body by wastes including chemical and sewage wastes, as well as accidental spillage of hydrocarbons and /or construction materials arise and need to be accounted for and managed. Increased port traffic may increase risks of pollution especially where vessels not subject to MARPOL regulations are engaged on site. Additional noise and vibration are also likely during the construction phase; however it is not considered likely that the latter would impact on shellfish aquaculture in any way.

## 6. Risk Assessment

The assessment has considered the identified risks as they arise during each stage and has attempted to evaluate the potential for these to impact on the shellfish sector in Carlingford Lough.

An evaluation of the potential for different impact sources to affect aquaculture operations is presented Table 3. The evaluation is presented as a determination of the level of risk (Low, Moderate, High) associated with each activity e.g. dredging, piling etc. and each project phase (construction, operation). In determining the level of risk, the assessment has reviewed and considered detailed project plans, construction methodology, projected timelines and other relevant details including the *Draft Construction Environmental Management Plan* (McCarthy Browne).

Where risks are identified as being **Moderate** or higher, suitable mitigations will be required to be designed and implemented in order to reduce risk levels for shellfish aquaculture to an acceptable level.

**Table 3.** Assessment of risk to shellfish aquaculture for ORE hub project at Greenore port

<b>Construction:</b> Capital dredging of the port area; installation of extension to quay wall; installation of new floating pontoon berthage and associated service infrastructure			
<b>Source</b>	<b>Receptor</b>	<b>Zone of potential impact on shellfish operations</b>	<b>Assessed Risk of Impact to shellfish aquaculture</b>
Dredging: local resuspension of sediments and increased sedimentation rates on intertidal / subtidal foreshore	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending out to 1000 meters radius to allow for sediment plume dispersion effects	Moderate
Dredging: Transport of sediments, particularly of finer fractions, and release of contaminants to other areas, resulting possibly in an increase in contaminant levels most notably TBT/DBT	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending out to 500 meters radius to allow for dispersion and sediment plume	Moderate
Dredging: release of nutrients, consumption of oxygen resulting in reduced oxygen saturation of the water body	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending to 500 meters radius to allow for dispersion and sediment plume	Moderate
Dredging: Reduced transparency of the water column resulting in reduced primary production and food availability	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Direct footprint of the project site extending to 500m meters radius to allow for dispersion	Low
Construction of quay wall extension and installation of floating pontoon berthage: release of fine sediments and dust into the water column	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius up to 200 metres depending on wind conditions and direction.	Low
Dredging and construction works: physical obstruction by vessels and plant	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	<100m	Low
Dredging and installation of quay wall extension and floating pontoons: contamination/pollution of water body by hydrocarbons/liquid contaminants	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Extending to 1000m radius from source	Moderate
Dredging and Installation of quay wall extension and installation floating pontoon berthage: Introduction of Invasive Alien Species (IAS)	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	IAS: Carlingford Lough	Low
Construction of new quay wall and floating pontoon berthage: loss /	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal	Direct footprint of (unplanned) loss or damage loss	

damage to adjacent licensed intertidal aquaculture sites	foreshore and subtidal environment in area of aquaculture activity.		Low
<b>Construction: Land side development of new port facilities</b>			
Construction of new port facilities: Pollution: Accidental spillage of hydrocarbons or cementitious material (land side), dust, contaminated water.	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Extending to 1000m within the waterbody from source	Moderate
Demolition of warehouse, stripping, breaking, removal from site - dust arising from demolition activities	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius up to 200 metres depending on wind conditions and direction.	Low
Piling – quay wall and pontoon breakwater piling giving rise to noise and vibration	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius Up to 500 metres (air) depending on wind conditions and direction, 2km in water.	Low
Contaminated water flowing into the designated sites stemming from demolition works	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Up to 200 metres depending on tidal conditions	Low
<b>Operation: Presence of new pontoon</b>			
Presence of new pontoon: introduction of IAS from visiting vessels	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity..	Direct footprint of pontoon extending out to entirety of Carlingford Lough	Low
Presence of new pontoon: Pollution (waste, sewage and accidental spillage of hydrocarbons)	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius of 250m	Low
<b>Operation: Port activities</b>			
Increased port activity: Pollution (waste, sewage and accidental spillage of hydrocarbons)	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	Radius – Waste, sewage: < 100 meters. Hydrocarbons: 500m (Small scale accidental spillage from crew transfer vessels)	Low
Increased port activity: Noise	Economic operation of aquaculture sites, live shellfish stock held in trestles on the intertidal foreshore and subtidal environment in area of aquaculture activity.	100m	Low

## 7. Mitigation

Table 4 summarises the elements of the proposed project at Greenore port that have been evaluated as presenting a Moderate risk of impact to shellfish aquaculture in Carlingford Lough, along with a description of the range of mitigations that may be deployed to prevent harmful impacts arising

**Table 4.** Summary of mitigation

Source	Available range of mitigations	Target revised risk of Impact to shellfish aquaculture AFTER design and implementation of appropriate mitigations.
Dredging: local resuspension of sediments and increased sedimentation rates on intertidal / subtidal foreshore.	<ul style="list-style-type: none"> <li>• Planning of excavation to avail of minimal tidal dispersion effects</li> <li>• Use of closing backhoe bucket, in areas of soft sediment, to minimise spillage</li> <li>• Avoidance of side-casting of excavate prior to barge loading</li> <li>• Deployment of turbidity monitoring and recording buoys with automated real time alarms</li> <li>• Deployment of buoy mounted oxygen monitoring and recording sensors with automated real time alarms</li> <li>• Aerial monitoring of sediment dispersion/dredging plume conducted by drone surveillance once per week on peak flood and ebb when dredging.</li> <li>• Management of unloading/transhipment to avoid spillage</li> <li>• All suitable and appropriate mitigations to be included in the <b>Construction Environmental Management Plan</b></li> </ul>	Low
Dredging: Transport of sediments, particularly of finer fractions, and release of contaminants to other areas, resulting in an increase in contaminant levels, most notably TBT/DBT	<ul style="list-style-type: none"> <li>• Use of closing backhoe bucket, in areas of soft sediment, to minimise spillage</li> <li>• Planning of excavation to avail of minimal tidal dispersion effects</li> <li>• Avoidance of side-casting of excavate prior to barge loading</li> <li>• Deployment of turbidity monitoring and recording buoys with automated real time alarms</li> <li>• Aerial monitoring of sediment dispersion/dredging plume conducted by drone surveillance once per week on peak flood and ebb when dredging.</li> <li>• Management of unloading/transhipment to avoid spillage</li> <li>• All suitable and appropriate mitigations to be included in the <b>Construction Environmental Management Plan</b></li> </ul>	Low
Dredging: release of nutrients, consumption of oxygen resulting in reduced oxygen saturation of the water body	<ul style="list-style-type: none"> <li>• Planning of excavation to avail of minimal tidal dispersion effects</li> <li>• Use of closing backhoe bucket, in areas of soft sediment, to minimise spillage</li> <li>• Avoidance of side-casting of excavate prior to barge loading</li> <li>• Deployment of turbidity monitoring and recording buoys with automated real time alarms</li> <li>• Deployment of buoy mounted oxygen monitoring and recording sensors with automated real time alarms</li> <li>• Aerial monitoring of sediment dispersion/dredging plume conducted by drone surveillance once per week on peak flood and ebb when dredging.</li> </ul>	Low

Source	Available range of mitigations	Target revised risk of impact to shellfish aquaculture AFTER design and implementation of appropriate mitigations.
	<ul style="list-style-type: none"> <li>Management of unloading/transhipment to avoid spillage</li> <li>All suitable and appropriate mitigations to be included in the <b>Construction Environmental Management Plan</b></li> </ul>	
Dredging and installation of quay wall extension and floating pontoons: contamination/pollution of water body by hydrocarbons/liquid contaminants	<p>Prepare protocol for the management of hydrocarbons and cement.</p> <p>For cement, specifically this should detail measures to:</p> <ul style="list-style-type: none"> <li>Assess where any wastewater associated with the use of cement will run and the most appropriate way to dispose of it.</li> <li>Ensure that appropriate measures are in place to avoid the potential for the run-off of cement into the marine area. Further ensure there is no potential for the run-off of cement into stormwater drains or that drains and gutters in the vicinity have been blocked off.</li> <li>Use spill mats to contain any spills</li> <li>Use sandbags or diversion booms to direct the any run-off to an appropriate safe location away from marine areas.</li> <li>Set up a designated Washdown Area away from marine areas or with potential to run-off to it.</li> <li>Ensure proper management in the event of an accidental spill.</li> </ul> <p>For hydrocarbons, mitigations should require:</p> <ul style="list-style-type: none"> <li>All hydrocarbons to be stored in bunded containers at least 20m away from marine areas.</li> <li>All plant and machinery and vessels should be regularly checked for leaks (fuel, oil and coolant).</li> <li>Drip trays will be used underneath any mobile plant and drums whilst in use on site.</li> <li>All machinery and vessels to have an on-board spill kit.</li> <li>A hydrocarbon oil boom to be available at all times onsite in the event of it needing to be deployed.</li> <li>If required, generators to be on a hydrocarbon mat at all times.</li> </ul>	Low

## 8. Conclusion

The desk study has aimed to assess the risks to shellfish aquaculture so as that potential negative impacts that may be associated with the development and operational phases of the proposed Greenore port development project can be avoided. Overall, the desk study concludes that with appropriate mitigations, the project will present a minimal risk to established shellfish aquaculture activity in Carlingford Lough,.

Nevertheless, there are potential risks associated mainly with resuspension of sediments, spread of contaminated material, sedimentation as well as depletion of oxygen. With appropriate design and implementation of mitigations these impacts can be avoided, and risks eliminated or reduced to levels that are likely to be acceptable to the shellfish aquaculture sector.



It will be imperative that all mitigations be designed, implemented fully and monitored for effectiveness as part of the overall **Construction Environmental Management Plan** (CEMP) for the proposed development of Greenore Port. A suitable CEMP is also likely to be a condition attached to the granting of consent to the development by the planning authority.

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# **APPENDIX 8.1**

## **RESOURCE WASTE MANAGEMENT PLAN (RWMP)**

### **VOLUME III**

#### **APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

MAY 2024

# **RESOURCE & WASTE MANAGEMENT PLAN FOR A PROPOSED DEVELOPMENT**

## **PROPOSED GREENORE PORT OPERATIONS AND MAINTENANCE FACILITIES**

### **Appendix 8.1**

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Report Prepared For

**Greenore Port Unlimited Company**

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Report Prepared By

**Chonail Bradley**  
Principal Environmental Consultant

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Our Reference

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## 1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Resource and Waste Management Plan (RWMP) on behalf of Greenore Port Unlimited Company. The development will provide for Operations and Maintenance (O&M) Facilities serving as a support base for future offshore windfarm projects. In general, it will comprise of terrestrial (landside) and nearshore works, with three standalone buildings incorporating office, warehouse and ancillary space landside and a pontoon to accommodate Crew Transfer Vessels (CTVs) marine side at Greenore Port and at 'Barbara's Field' (A91DD42), Shore Road, Greenore, Co. Louth, (total site area c.4.63 hectare. To facilitate the proposed development, dredging within the nearshore and the demolition of existing port buildings and a vacant residential property is required.

This plan provides information necessary to ensure that the management of Construction & Demolition (C&D) waste at the site is undertaken in accordance with the current legal and industry standards including the *Waste Management Act 1996* as amended and associated Regulations <sup>1</sup>, *Environmental Protection Agency Act 1992* as amended <sup>2</sup>, *Litter Pollution Act 1997* as amended <sup>3</sup>, the *National Waste Management Plan for a Circular Economy 2024 – 2030* (2024) <sup>4</sup>. In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also provides appropriate measures in relation to the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the proposed development and prescribes measures for the management of different waste streams. The RWMP should be viewed as a live document and will be regularly revisited throughout the project's lifecycle so that opportunities to maximise waste reduction / efficiencies are exploited throughout, and that data is collected on an ongoing basis so that it is as accurate as possible.

## 2.0 C&D RESOURCE WASTE MANAGEMENT IN IRELAND

### 2.1 National Level

The Irish Government issued a policy statement in September 1998, *Changing Our Ways* <sup>5</sup>, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2018).

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled '*Recycling of Construction and Demolition Waste*' <sup>6</sup> concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan, '*A Waste Action Plan*

*for a Circular Economy*<sup>7</sup> (WAPCE), replaces the previous national waste management plan, “*A Resource Opportunity*” (2012), and was prepared in response to the ‘European Green Deal’ which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities.

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 ‘Living More, Using Less’ (2021)<sup>8</sup> to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022<sup>9</sup> was signed into law in July 2022. The Act underpins Ireland’s shift from a “take-make-waste” linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will work to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Environmental Protection Agency (EPA) of Ireland issued ‘*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*’ in November 2021<sup>10</sup>. These guidelines replace the previous 2006 guidelines issued by The National Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006<sup>11</sup>. The guidelines provide a practical approach which is informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project, including consideration of the deconstruction of a project. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- Design teams roles and approach;
- Relevant EU, national and local waste policy, legislation and guidelines;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for Resource Waste Manager (RM) and site crew;

- Details of proposed record keeping system;
- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e. waste recycling companies, Local Authority, etc.

Section 3 of the Guidelines identifies thresholds above which there is a requirement for the preparation of a RWMP for developments. The new guidance classifies developments on a two-tiered system. Developments which do not exceed any of the following thresholds may be classed as Tier 1 development:

- New residential development of less than 10 dwellings.
- Retrofit of 20 dwellings or less.
- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m<sup>2</sup>.
- Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000m<sup>2</sup>; and
- Demolition projects generating in total less than 100m<sup>3</sup> in volume of C&D waste.

A development which exceeds one or more of these thresholds is classed as Tier-2 projects.

This development requires a RWMP as a Tier 2 development as it is above following criterion:

- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m<sup>2</sup> and;
- Demolition projects generating in total less than 100m<sup>3</sup> in volume of C&D waste.

Other guidelines followed in the preparation of this report include '*Construction and Demolition Waste Management – a handbook for Contractors and Site Managers*'<sup>12</sup>, published by FÁS and the Construction Industry Federation in 2002 and the previous guidelines, 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006).

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

## 2.2 Regional Level

The proposed development is located in the Local Authority area of Louth County Council (LCC).

The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021 has been superseded as of March 2024 by the NWMPCE 2024 - 2030.

The NWMPCE does not dissolve the three regional waste areas. The NWMPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

### National Targets

1B. (Construction Materials) 12% Reduction in Construction & Demolition Waste Generated by 2030.

3B. (Reuse Facilities) Provide for reuse at 10 Civic Amenity Sites, minimum

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140 - €160 per tonne of waste which includes an €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) (Amendment) Regulations 2015 (as amended)..

The *Louth County Development Plan 2021 – 2027*<sup>13</sup> sets out a number of objectives for the Louth County Council area, in line with the objectives of the regional waste management plan. Waste policies with relevance to the proposed development are:

**ENV 24** To implement and support the provisions of the Eastern-Midlands Region Waste Management Plan 2015-2021 or any subsequent plan and EU Directives/Policies.

**ENV 25** To support the development of an additional recycling centre in the Mid – Louth Area.

**ENV 26** To facilitate the provision of adequate waste recovery and disposal facilities in appropriate locations, as deemed necessary in accordance with the requirements of the current 'Eastern Midlands Region Waste Management Plan' and any subsequent plans.

## **2.3 Legislative Requirements**

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 as amended.
- Environmental Protection Act 1992 as amended.
- Litter Pollution Act 1997 as amended.
- Planning and Development Act 2000 as amended<sup>14</sup>
- Circular Economy and Miscellaneous Provisions Act 2022.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996 - 2001* and subsequent Irish legislation, is the principle of “*Duty of Care*”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery or disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to



the final destination. Following on from this is the concept of “Polluter Pays” whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the Developer ensures that the waste contractors engaged by C&D contractors are legally compliant with respect to waste transportation, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments* or a waste or licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

### 3.0 Design Approach

The client and the design team have integrated the ‘*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*’ guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life and management post demolition and construction. Further details on these design principals can be found within the aforementioned guidance document.

The design team have undertaken the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections have been the focal point of the design process and material selections and will continued to be analysed and investigated throughout the design process and when selecting material.

As noted in the EPA guidelines, the approaches presented are based on international principles of optimising resources and reducing waste on construction projects through:

- Prevention;
- Reuse;
- Recycling;
- Green Procurement Principles;
- Off-Site Construction;
- Materials Optimisation; and
- Flexibility and Deconstruction.

### 3.1 Designing For Prevention, Reuse and Recycling

Undertaken at the outset and during project feasibility and evaluation the Client and Design Team considered:

- Establishing the potential for any reusable site assets (buildings, structures, equipment, materials, soils, etc.);
- The potential for refurbishment and refit of existing structures or buildings rather than demolition and new build;
- Assessing any existing buildings on the site that can be refurbished either in part or wholly to meet the Client requirements; and
- Enabling the optimum recovery of assets on site.

### 3.2 Designing for Green Procurement

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders and incentivise competitions to recognise sustainable approaches. They will also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as 'Just-in-Time' delivery and use ordering procedures that avoid excessive waste. The Green procurement extends from the planning stage into the detailed design and tender stage and will be an ongoing part of the long-term design and selection process for this development.

### 3.3 Designing for Off-Site Construction

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- Modular buildings as these can displace the use of concrete and the resource losses associated with concrete blocks such as broken blocks, mortars, etc.;
  - Modular buildings are typically pre-fitted with fixed plasterboard and installed insulation, eliminating these residual streams from site.
- Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.;
- The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards;
- Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively; and
- Designing for the preferential use of offsite modular units.

### 3.4 Designing for Materials Optimisation During Construction

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite.. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for

certain materials to help reduce the amount of offcuts produced on site, focusing on promotion and development of off-site manufacture.

### 3.5 Designing for Flexibility and Deconstruction

Design flexibility has and will be investigated throughout the design process to ensure that where possible products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

## 4.0 DESCRIPTION OF THE PROJECT

### 4.1 Location, Size and Scale of the Development

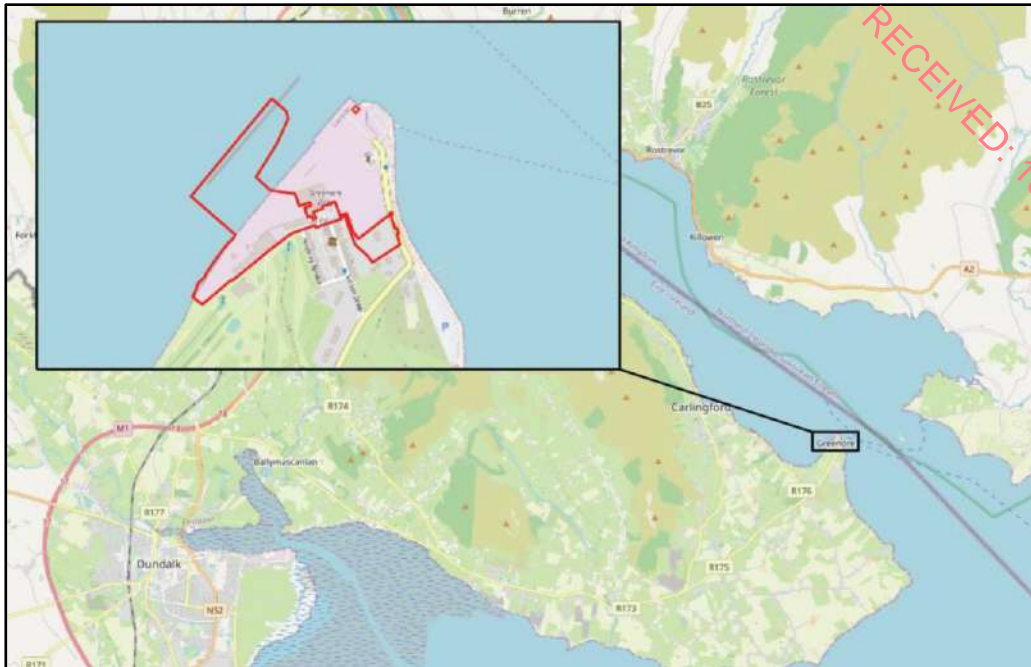
Greenore Port Unlimited Company intend to apply for a 10-year permission for development at Greenore Port and at 'Barbara's Field' (A91DD42), Shore Road, Greenore, Co. Louth, (total site area c.4.63 hectare).

The development will provide for Operations and Maintenance (O&M) Facilities serving as a support base for future offshore windfarm projects. In general, it will comprise of terrestrial (landside) and nearshore works, with three standalone buildings incorporating office, warehouse and ancillary space landside and a pontoon to accommodate Crew Transfer Vessels (CTVs) marine side. To facilitate the proposed development, dredging within the nearshore and the demolition of existing port buildings and a vacant residential property is required.

The Operations and Maintenance Facilities (OMF) will provide twenty-four-seven, year-round support, to three individual offshore renewable energy (ORE) projects that will be owned and operated by entities separate from the applicant. These ORE projects will consist of offshore windfarms on the East Coast of Ireland.

The proposed scheme is distributed over several individual plots, and for ease of reference, they are described as follows:-

1. 'Terrestrial Port Area', (c.2ha) which includes, a port commodity warehouse (former Open Hydro building), hardstanding areas, remnant wall associated with the pre-existing 'engine room', and a communications mast.
2. 'Nearshore Environment' (c.2ha) encompassing part of Carlingford Lough and an existing caisson quay wall, known as 'Berth 3'.
3. 'Residential Site' (c. 0.5ha) a greenfield site with a single-storey unoccupied residential dwelling with frontage to the R175, Shore Road.
4. 'Port Office Entrance' (c. 0.18ha) encompassing a portion of the existing office building, known as the 'Seafarers room', hardstanding and parking area to the front of the port office with pockets of green space, that front Euston Street.



**Figure 4.1** Site Location.



**Figure 4.2** General Proposed Site Layout.





**Figure 4.3** General location plan of the plots identified above.

Three standalone operation and maintenance buildings incorporating office, warehouse and ancillary space (canteen, welfare, plant, cycle parking etc.) are proposed within the 'terrestrial port' area. Each building has a gross floor area of c.1,670 sq.m and a maximum height of 13.5m.

A new quay wall will be developed at Berth 3 (70m length). This will include a new quay wall face and upgraded deck. A pontoon will be constructed to accommodate crew transfer vessels (CTVs), for use by the operators to travel out to the offshore windfarms. The CTV's will be accessed via an access ramp connected to the quay wall and deck. Approx 45,000m<sup>3</sup> of material will be dredged to facilitate navigable access at this location, and it will be disposed of on land. Where rock is encountered (estimate max of 1,000m<sup>3</sup>), it will be reused on site.

Adjacent to the buildings, space is allocated for 76 car parking spaces, with a further 135 spaces proposed in the surface carpark at the 'Residential Site' on Shore Road. The existing carpark associated with the former Open Hydro building (60 spaces) will be used during the construction phase and Phase 1 of the development.

Pedestrian and motor vehicle access is via the existing entrance beside the Port's office, which served the previous Open Hydro development. Heavy goods vehicles will access the buildings via the Port's existing heavy goods entrance on Shore Road (R175). Pedestrian access from the surface carpark to the OMF buildings will be provided along a new pedestrian route within the Port's landholding.

To facilitate the development, demolition works are required, including the former Open Hydro building, an ESB substation, a small portion of the Port's office accommodation and the vacant dwelling at the 'residential site' on Shore Road.

Improvement works to the public / private realm in the foreground of the existing Greenore Port office building will comprise of an enhancement to existing road and pathways to facilitate improved pedestrian and vehicular access to the proposed O&M Facilities, a new feature entrance wall, removal of 6 no. port car parking spaces, link to new pedestrian route from the new Shore Road carpark and hard and soft landscaping. These works are located within the Greenore Architectural Conservation Area (ACA). The aim is to redesign the space to improve the character of the ACA at this point; provide a more user friendly space with pedestrian priority; and improve the existing access arrangements to the site. Inside the proposed main entrance to the site, it is proposed to integrate the existing engine shed wall and include this as a feature within the landscape design.

Ancillary development will include the installation of drainage infrastructure, landscaping, lighting, signage, boundary treatments, rooftop solar photovoltaic panels, an ESB substation, a communications mast, a bunded fuel storage tank and waste management areas etc.

The infrastructure described above will likely be delivered over two phases. However, this could extend to three phases, or the sequence of the works may vary,, depending on the delivery of future ORE projects and the associated Offshore Renewable Energy Auctions..

#### **4.2 Details of the Non-Hazardous Wastes to be produced**

There will be waste materials generated from the demolition of some existing structures onsite. This will include the demolition of the former 'OpenHydro building', and a small portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house on site to accommodate the new development and facilitation works.

The volume of waste generated from excavation/demolition will be more difficult to segregate than waste generated from the construction phase, as the building materials will be integrated i.e. steel embedded in concrete.





**Figure 4.4** General Location of Demolition Works

There will be soil and stones excavated to facilitate construction of new foundations and the installation of underground services. The project engineers (McCarthy Browne) have estimated that c. 7,225 m<sup>3</sup> of material will need to be excavated to do so. It is currently envisaged that there will be an opportunity to reuse c. 4,265 m<sup>3</sup> of excavated material for use in landscaping and fill. The remaining 2,960 m<sup>3</sup> of material, will need to be removed offsite due to the limited opportunities for reuse on site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

There will be dredging undertaken to facilitate navigable access and suitable berthing for the crew transfer vessels (CTV)s. The project engineers (McCarthy Browne) have estimated that c. 45,000 m<sup>3</sup> of material will need to be dredged to do so. It is currently envisaged that all material except for 1,000 m<sup>3</sup> of dredged rock, will need to be removed offsite due to the limited opportunities for reuse on site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated. The contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

Waste will also be generated from construction workers e.g. organic/food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

## 4.3 Potential Hazardous Wastes Arising

### 4.3.1 Contaminated Soil

Site investigations were carried out by K.T. Cullen & Co Ltd in December 1996 which identified slight hydrocarbon contamination in the soil in the southern extent of the site and in the groundwater. To further analyse the hydrocarbon contamination identified in the December 1996 site investigation, an environmental site assessment of the site was carried out by URS in 2004 and identified hydrocarbon contamination in the shallow soils in an area of scrub grassland and to the north-east of the refuelling gantry. No hydrocarbon contamination was detected during the 2004 site investigation.

On November 14th 2011, RPS carried out a site investigation on behalf of then "Topaz Energy Group Ltd" on the shallow subsoil and groundwater beneath the decommissioned Topaz fuel storage facility at Greenore Port, Co. Louth, with the aim of developing an exit strategy for the site.

A large range of petroleum hydrocarbons (C8-C40) were detected in the upper subsoil at 0.5 mbgl of BH1 (BH1-1) located adjacent to the Non-Conforming Product Store. Petroleum hydrocarbons of the range C12-C40 were detected in BH4-1 at 0.5 mbgl and C21-C40 in BH4-2 at 3.0 mbgl located to the west of the refuelling gantry. Petroleum hydrocarbons of the range C12-C40 were detected in BH5-1 at 0.5 mbgl located downgradient of the oil water receptor.

None of the detected levels exceeded the Dutch Intervention values for mineral oil (5000mg/kg) which may be applied to petroleum hydrocarbons in soil. All other samples were below the laboratories limit of detection (LOD).

Additional soil testing and sampling were undertaken in 2024 by McCarthy Browne on 4 samples. These samples were classified as either inert or non-hazardous using the *HazWasteOnline* application.

Prior to any material being removed from site further environmental soil testing will be undertaken on both the excavated and dredged material.

If any potentially contaminated material is encountered, it will need to be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled '*Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous*'<sup>13</sup> using the *HazWasteOnline* application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC*, which establishes the criteria for the acceptance of waste at landfills.

In the event Asbestos Containing Materials (ACMs) are identified, removal will only be carried out by a suitably permitted waste contractor, in accordance with *the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*. If identified, asbestos will be taken to a suitably licensed or permitted facility.

In the event that hazardous soil, or historically deposited waste is encountered during the construction phase, the contractor will notify LCC and provide a Hazardous/Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s).

#### 4.3.2 Fuel/Oils

Fuels and oils are classed as hazardous materials; any on-site storage of fuel/oil, and all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil waste generated at the site.

#### 4.3.3 Invasive Plant Species

The project ecologist has undertaken a site assessment/survey searching directly for evidence of Japanese Knotweed (*Fallopia japonica*) and other invasive species. This included a walkover survey of the entire site, and around part of the outside perimeter. No Knotweed plant species were recorded inside the site boundary.

Japanese Knotweed is an alien invasive species listed under *Schedule 3 of Regulations SI No. 355/2015*. The project ecologist concluded that it is not present on this site.

#### 4.3.4 Asbestos

OHSS Safety Consultants have undertaken an asbestos demolition survey for the purpose of identifying any asbestos or Asbestos Containing Materials (ACM). The survey identified asbestos and ACMs at several locations within the Bungalow building (dwelling house) and its attached garage store. There was no asbestos located in any of the other buildings inspected as part of the survey.

Where ACMs are detected on site, the removal of asbestos or ACMs will be carried out by a suitably qualified contractor and ACMs will only be removed from site by a suitably permitted/licenced waste contractor. in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*. All material will be taken to a suitably licensed or permitted facility.

#### 4.3.5 Other known Hazardous Substances

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner/cartridges, batteries (Lead, Ni-Cd or Mercury) and/or fluorescent tubes and other mercury containing waste may be generated from during C&D activities or temporary site offices. These wastes, if generated, will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

### 5.0 Roles and Responsibilities

The *Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects* promotes that a RM should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately

trained, who takes the responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction and demolition methodology that is designed to facilitate maximum reuse and/or recycling of waste.

### 5.1 Role of the Client

The Client are the body establishing the aims and the performance targets for the project.

- The Client has commissioned the preparation and submission of this RWMP as part of the design and planning submission;
- The Client is to commission the preparation and submission of an updated RWMP as part of the construction tendering process;
- The Client will ensure that the RWMP is agreed on and submitted to the local authority and their agreement obtained prior to commencement of works on site;
- The Client will request the end-of-project RWMP from the Contractor.

### 5.2 Role of the Client Advisory Team

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- Drafting and maintaining the RWMP through the design, planning and procurement phases of the project;
- Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP.
- Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This will also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team;
- Managing and valuing the demolition work with the support of quantity surveyors;
- Handing over of the RWMP to the selected Contractor upon commencement of construction of the development, in a similar fashion to how the safety file is handed over to the Contractor;
- Working with the Contractor as required to meet the performance targets for the project.

### 5.3 Future Role of the Contractor

The future C&D contractors have not yet been decided upon for this RWMP. However, once select they will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the (including the Pre-Demolition) RWMP throughout the demolition and construction phases (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines;

- Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP;
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site;
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable;
- Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during construction and reduce the amount of HGV loads required to remove material from site;
- Applying for the appropriate waste permit to crush concrete onsite;
- Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility;
- End-of-waste and by-product notifications addressed with the EPA where required;
- Clarification of any other statutory waste management obligations, which could include on-site processing;
- Full records of all resources (both wastes and other resources) will be maintained for the duration of the project; and
- Preparing a RWMP Implementation Review Report at project handover.

## 6.0 Key Materials & Quantities

### 6.1 Project Resource Targets

Project specific resource and waste management targets for the site have not yet been set and this information will be updated for these targets once these targets have been confirmed by the client. However, it is expected for projects of this nature that a minimum of 70% of waste is fully re-used, recycled or recovered. Target setting will inform the setting of project-specific benchmarks to track target progress. Typical Key Performance Indicators (KPIs) that may be used to set targets include (as per guidelines):

- Weight (tonnes) or Volume ( $m^3$ ) of waste generated per construction value;
- Weight (tonnes) or Volume ( $m^3$ ) of waste generated per construction floor area ( $m^2$ );
- Fraction of resource reused on site;
- Fraction of resource notified as by-product;
- Fraction of waste segregated at source before being sent off-site for recycling/recovery; and
- Fraction of waste recovered, fraction of waste recycled, or fraction of waste disposed.

### 6.2 Main Construction and Demolition Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction activities at a typical site are shown in Table 6.1. The List of Waste (LoW) code (2018) for each waste stream is also shown.

**Table 6.1** Typical waste types generated and LoW codes (individual waste types may contain hazardous substances)

Waste Material	LoW/EWC Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

\* individual waste type may contain hazardous substances

## 7.0 WASTE MANAGEMENT

### 7.1 Demolition Waste Generation

There will be waste materials generated from the demolition of some existing structures onsite. This will include the demolition of the former 'OpenHydro building', and a small portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house on site to accommodate the new development and facilitation works.

The demolition areas are identified in the planning drawings provided with the planning application. The anticipated demolition waste and rates of reuse, recycling / recovery and disposal are shown in Table 7.1 below.



**Table 7.1** Estimated off-site reuse, recycle and disposal rates for demolition waste

Waste Type	Tonnes	Reuse		Recycle / Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Glass	10.0	0.0	0.0	85.0	8.5	15.0	1.5
Concrete, Bricks, Tiles, Ceramics	2047.2	40.0	818.9	55.0	1126.0	5.0	102.4
Plasterboard	3.0	0.0	0.0	80.0	2.4	20.0	0.6
Asphalts	75.0	0.0	0.0	25.0	18.8	75.0	56.3
Metals	74.7	2.0	1.5	90.0	67.3	8.0	6.0
Timber	2.0	10.0	0.2	40.0	0.8	50.0	1.0
<b>Total</b>	<b>2211.9</b>		<b>820.6</b>		<b>1223.8</b>		<b>167.8</b>

## 7.2 Construction Waste Generation

The below Table 7.2 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA *National Waste Reports* <sup>14</sup> and the joint EPA & GMIT study <sup>15</sup>, along with other research reports.

**Table 7.2:** Waste materials generated on a typical Irish construction site

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
<b>Total</b>	<b>100</b>

Tables 7.3, below shows the estimated construction waste generation for the development based on the gross floor area of construction and other information available to date, along with indicative targets for management of the waste streams. The estimated waste amounts for the main waste types (with the exception of soils and stones) are based on an average large-scale development waste generation rate per m<sup>2</sup>, using the waste breakdown rates shown in Table 7.2. These have been calculated from the schedule of development areas provided by the architect.

**Table 7.3:** Predicted on and off-site reuse, recycle and disposal rates for construction waste

Waste Type	Tonnes	Reuse		Recycle/Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	32.8	10	3.3	80	26.3	10	3.3
Timber	27.9	40	11.1	55	15.3	5	1.4
Plasterboard	9.9	30	3.0	60	6.0	10	1.0
Metals	8.0	5	0.4	90	7.2	5	0.4
Concrete	6.0	30	1.8	65	3.9	5	0.3
Other	14.9	20	3.0	60	9.0	20	3.0
<b>Total</b>	<b>99.5</b>		<b>22.6</b>		<b>67.5</b>		<b>9.4</b>

In addition to the information in Table 7.3, there will be c. 7,225 m<sup>3</sup> of soil and stones excavated to facilitate construction of new foundations and installation of underground services. Any suitable excavated material will be temporarily stockpiled for reuse as fill, where possible, but reuse on site is expected to be limited to c. 4,265 m<sup>3</sup>, while the remaining excavated material is expected to be removed offsite for appropriate reuse, recovery and/or disposal.

As well as soil and stone from land based excavations there will be dredging undertaken to facilitate navigable access and suitable berthing for the CTVs. The project engineers have estimated that c. 45,000 m<sup>3</sup> of material will need to be dredged to do so. It is currently envisaged that all material except for 1,000 m<sup>3</sup>, will need to be removed offsite due to the limited opportunities for reuse on site. This will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

### 7.3 Proposed Resource and Waste Management Options

Waste materials generated will be segregated on site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source where feasible. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the Dublin Region that provide this service.

All waste arising's will be handled by an approved waste contractor holding a current waste collection permit. All waste arising's requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

National End-of-Waste Decision EoW-N001/2023 (Regulation 28) establishes criteria determining when recycled aggregate resulting from a recovery operation ceases to be waste. Material from this proposed development will be investigated to see if it can

cease to be a waste under the requirements of the National End of Waste Criteria for Aggregates.

During construction some of the sub-contractors on site will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (Ref. Article 30 (1) (b) of the Waste Collection Permit Regulations 2007 as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste offsite in their work vehicles (which are not design for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence.

Written records will be maintained by the contractor(s) detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contractors who collect waste from the site and COR/permit or licence for the receiving waste facility for all waste removed off site for appropriate reuse, recycling, recovery and/or disposal

Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc, if required.

The anticipated management of the main waste streams is outlined as follows:

#### Soil and Stone

The waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for the excavation phase.

When material is removed off-site it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Regulation 27 (By-products), as amended, of S.I. No. 323/2020 - European Union (Waste Directive) Regulations 2011-2020, (Previously Article 27 of the European Communities (Waste Directive), which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Regulation 27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Regulation 27. Regulation 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse / recovery / disposal of the material will be carried out in accordance with the *Waste Management Act 1996* as amended, the *Waste Management (Collection Permit) Regulations 2007* as amended and the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

#### Dredged Material

To facilitate navigable access and suitable berthing for the CTVs it is necessary to carry out c.45,000m<sup>3</sup> of dredging. The declared depth in this dredge pocket shall be -4m CD. The dredge material shall be soft dredge arisings (gravel, silt, sand, clay) with EWC Code 170506. Based on Ground investigations undertaken, it is not anticipated that rock will be encountered during the dredge (170506). If it is encountered, any volume would be small. A nominal value of approx. 1,000m<sup>3</sup> has been considered.

If suitable, excavated material may be re-used behind the new quay wall (1,000 m<sup>3</sup> of rock). Material which does not comply with the required engineering properties will be disposed of on land in a suitably licensed facility.

#### Bedrock

While it is not envisaged that bedrock will be encountered, if bedrock is encountered, it is anticipated that it will not be crushed on site. Any excavated rock is expected to be removed offsite for appropriate reuse, recovery and/or disposal. If bedrock is to be crushed onsite the appropriate mobile waste facility permit will be obtained from LCC.

#### Silt & Sludge

During the construction phase, silt and petrochemical interception will be carried out on runoff and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed offsite.

#### Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and will be recycled, where possible. If concrete is to be crushed onsite the appropriate mobile waste facility permit will be obtained from LCC.

### Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

### Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skip and recycled off-site.

### Metal

Metals will be segregated where practical and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

### Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

### Glass

Glass materials will be segregated for recycling, where possible.

### Waste Electrical and Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling.

### Other Recyclables

Where any other recyclable wastes such as cardboard and soft plastic are generated, these will be segregated at source into dedicated skips and removed off-site.

### Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team (see Section 10.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

### Asbestos Containing Materials

If any asbestos or ACMs are found onsite, they will be removed by a suitably competent contractor and disposed of as asbestos waste before the demolition works begin. All asbestos removal work or encapsulation work must be carried out in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*.

### Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and/or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

### Onsite Crushing

It is currently not envisaged that the crushing of waste materials will occur onsite, however if the crushing of material is to be undertaken a mobile waste facility permit will first be obtained from LCC and the destination of the excepting waste facility or if an application under regulation 28 will be made using National End-of-Waste Decision EoW-N001/2023, will be supplied to the LCC waste unit.

## **7.4 Tracking and Documentation Procedures for Off-Site Waste**

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project RM (see Section 10.0).

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 - 2011*, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM (see Section 10.0) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR/permit or EPA Waste/IE Licence for that site will be provided to the nominated project RM (see Section 10.0). If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from Dublin City Council (as the relevant authority on behalf of all local authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on site.

## **8.0 ESTIMATED COST OF WASTE MANAGEMENT**

An outline of the costs associated with different aspects of waste management is outlined below. The total cost of C&D waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.



## 8.1 Reuse

By reusing materials on site, there will be a reduction in the transport and recycle/recovery/disposal costs associated with the requirement for a waste contractor to take the material off-site.

Clean and inert soils, gravel, stones etc. which cannot be reused on site may be used as access roads or capping material for landfill sites etc. This material is often taken free of charge or a reduced fee for such purposes, reducing final waste disposal costs.

## 8.2 Recycling

Salvageable metals will earn a rebate which can be offset against the costs of collection and transportation of the skips.

Clean uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes such as timber from a site than mixed waste.

## 8.3 Disposal

Landfill charges are currently at around €140 - €160 per tonne which includes a €85 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc. is also used as fill/capping material, wherever possible.

## 9.0 DEMOLITION PROCEDURES

There will be waste materials generated from the demolition of some existing structures onsite. This will include the demolition of the former 'OpenHydro building', and a small portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house on site to accommodate the new development and facilitation works. The demolition areas are identified in the planning drawings submitted as part of the planning application. A formal demolition plan including safety procedures will be prepared by the demolition contractor. However, in general, the following sequence of works should be followed during the demolition stage:

### Check for Hazards

Prior to commencing works, buildings and structures to be demolished will be checked for any likely hazards including asbestos, ACMs, electrical power lines or cables, gas reticulation systems, telecommunications, unsafe structures and fire / explosion hazards, e.g. combustible dust, chemical hazards, oil, fuels and contamination.

### Removal of Components

All hazardous materials will be removed first. All components from within the buildings that can be salvaged will be removed next. This will primarily be comprised of metal; however, may also include timbers, doors, windows, wiring and metal ducting, etc.

### Removal of Roofing

Steel roof supports, beams, etc., will be dismantled and taken away for recycling / salvage.

### Excavation of Services, Demolition of Walls and Concrete

Services will be removed from the ground and the breakdown of walls will be carried out once all salvageable or reusable materials have been taken from the buildings. Finally, any existing foundations and hard standing areas will be excavated.

## **10.0 TRAINING PROVISIONS**

A member of the construction team will be appointed as the project RM to ensure commitment, operational efficiency and accountability during the C&D phases of the project.

### **10.1 Resource Manager Training and Responsibilities**

The nominated RM will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site. The RM will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the RM to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

### **10.2 Site Crew Training**

Training of site crew is the responsibility of the RM and, as such, a waste training program will be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

## 11.0 TRACKING AND TRACING / RECORD KEEPING

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arising's on site.

A waste tracking log will be used to track each waste movement from the site. On exit from the site the waste collection vehicle driver will stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or WTF for hazardous waste) for the waste load collected. At this time, the security personnel will complete and sign the Waste Tracking Register with the following information:

- Date
- Time
- Waste Contractor
- Company waste contractor appointed by e.g. Contractor or subcontractor name
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- Quantity
- LoW code

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the LCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically reviewed by the RM. Subcontractors who have engaged their own waste contractors, will provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

## 12.0 OUTLINE WASTE AUDIT PROCEDURE

### 12.1 Responsibility for Waste Audit

The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the development. Contact details for the nominated RM will be provided to

the LCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

## **12.2 Review of Records and Identification of Corrective Actions**

A review of all waste management costs and the records for the waste generated and transported off-site should be undertaken mid-way through the project.

If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery/reuse/recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling/reuse/recovery figures for the development.

## **13.0 C&D ENVIRONMENTAL MITIGATION MEASURES**

During the construction phase the project Construction Environmental Management Plan (CEMP) will be followed in regard to implementing and managing all environmental management requirements.

This CEMP explains the construction techniques and methodologies which will be implemented during the construction of the proposed development.

The CEMP mitigation measures will be implemented to ensure that pollution and nuisances arising from site clearance and construction activities is prevented where possible and managed in accordance with best practice environmental protection.

The CEMP will be implemented and adhered to by the C&D contractors and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, RM and Ecological Clerk of Works where relevant. All personnel working on the site will be trained in the implementation of the procedures.

## **14.0 CONSULTATION WITH RELEVANT BODIES**

### **14.1 Local Authority**

Once C&D contractors have been appointed, have appointed waste contractors and prior to removal of any C&D waste materials offsite, details of the proposed destination of each waste stream will be provided to the LCC Waste Regulation Unit.

LCC will also be consulted, as required, throughout the demolition, excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

## 14.2 Recycling/Salvage Companies

The appointed waste contractor for the main waste streams managed by the C&D contractors will be audited in order to ensure that relevant and up-to-date waste collection permits and facility registrations/permits/licences are held. In addition, information will be obtained regarding the feasibility of recycling each material, the costs of recycling/reclamation, the means by which the wastes will be collected and transported off-site, and the recycling/reclamation process each material will undergo off site.

## 15.0 REFERENCES

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