

Greenore Port Unlimited Company

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

**VOLUME I**  
NON-TECHNICAL SUMMARY



MAY 2024

## Document Control Sheet

RECEIVED: 28/05/2024

<b>Client</b>	Greenore Port Unlimited Company			
<b>Project Title</b>	Proposed Greenore Port Operations and Maintenance Facilities at Greenore Port			
<b>Document Title</b>	EIAR Volume I Non-Technical Summary			
<b>Document No.</b>	4496			
<b>Document</b>	DCS	TOC	Text	Appendices
<b>Comprises</b>	1	1	115	0
<b>Prepared by</b>	LO'L/AH	<b>Checked by</b>	PG	

Revision	Status	Issue date
A	ISSUED	28.05.24

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# 1 Introduction

Article 5(1)(e) of the EIA Directive requires the project proponent to include a Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) and it is transposed into Irish law under article 94(c) of the Planning and Development Regulations 2001, as amended. The term 'non-technical' indicates that this summary should not include technical terms, detailed data and scientific discussion, that detail is presented in Volume II, the EIAR.

This Non-Technical Summary provides a concise, but comprehensive description of the Project, its existing environment, the effects of the project on the environment, the proposed mitigation measures, and the proposed monitoring arrangements, where relevant. The NTS highlights any significant uncertainties about the project. It explains the development consent process for the Project and the role of the EIA in that process.

It is important to highlight that the assessments that form part of the EIAR were undertaken as an iterative process rather than a one-off, post-design environmental appraisal. Findings from the individual assessments have been fed into the design process, resulting in a project which achieves a 'best fit' within the environment.

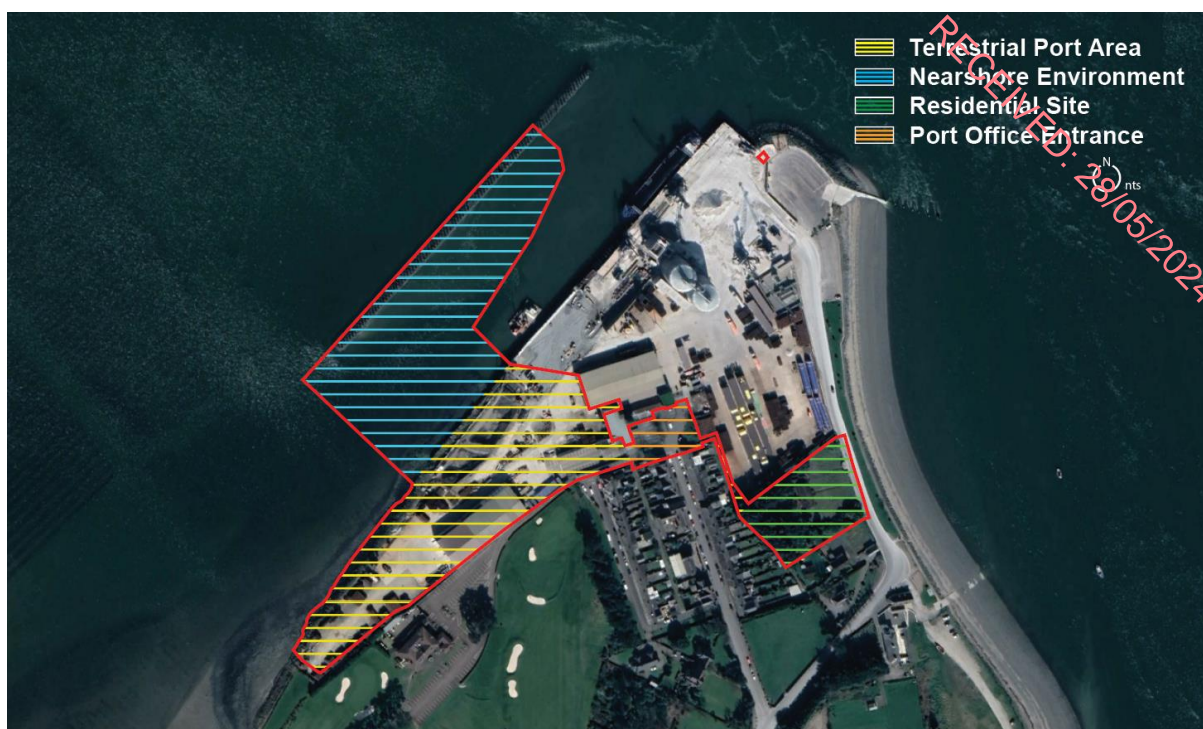
The summary of the proposed development is set out in Section 2.1. A detailed description of the project is provided in Chapter 2.

To summarise, the applicant seeks permission for Operation and Maintenance (O&M) Facilities which will serve as the support base for offshore wind arrays. In general, it will comprise of landside and marine side works, with three individual combined warehouse and office units 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 proposed development will involve ancillary facilities including carparking, upgrade works to quay deck and quay wall and all associated site and development works. A ten-year permission is sought.

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

1. **'Terrestrial Port Area'**, (c.1.9ha) 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.2.3ha) 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 1 Application Site with Development Areas**

## 1.1 Screening for Environmental Impact Assessment

Environmental Impact Assessment (EIA) requirements derive from EU Directives. Council Directive 2014/52/EU amended Directive 2011/92/EU and is transposed into Irish Law by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

Proposed development which falls within one of the categories of development specified in Schedule 5 of the Planning and Development Regulations 2001, as amended, which equals or exceeds, a limit, quantity, or threshold prescribed for that class of development must be accompanied by an EIAR.

There is no mandatory requirement under the above provisions for an EIAR for the proposed development, however having regard to case law (refer to Section 1.11 below), this EIAR has been prepared to support the proposed application.

## 1.2 Competency

It is a requirement that the EIAR must be prepared by competent experts. For the preparation of this EIAR, the Applicant engaged McCutcheon Halley Chartered Planning Consultants to direct and coordinate the preparation of the EIAR and a team of qualified specialists were engaged to prepare individual chapters. The consultant firms and lead authors are listed in **Table 1**. Details of competency, qualifications, and experience of the lead author of each discipline is outlined in the individual chapters.

**Table 1 EIAR Chapters & Contributors**

<b>Chapter</b>	<b>Aspect</b>	<b>Consultancy</b>	<b>Lead Consultant</b>
1	<b>Introduction</b>	McCutcheon Halley Planning Consultants	Paula Galvin
2	<b>Project Description</b>	McCutcheon Halley Planning Consultants	Paula Galvin
3	<b>Alternatives</b>	McCutcheon Halley Planning Consultants	Paula Galvin
4	<b>Population &amp; Human Health</b>	McCutcheon Halley Planning Consultants	Paula Galvin
5	<b>Landscape &amp; Visual</b>	Cunnane Stratton Reynolds - LVIA Pivotal - Photomontages	Jamie Ball Andrew Castle
6	<b>Material Assets: Traffic &amp; Transport</b>	TrafficWise	Julian Keenan
7	<b>Material Assets: Built Services</b>	McCarthy Browne	Joseph McCarthy
8	<b>Material Assets: Waste</b>	AWN Consulting	Chonail Bradley
9	<b>Land &amp; Soils</b>	AWN Consulting	Alan Wilson
10	<b>Water &amp; Hydrology</b>	AWN Consulting	Alan Wilson
11	<b>Coastal Processes</b>	RPS	Penny Hayworth
12	<b>Biodiversity</b>	MERC Environmental RegIntel Irish Whale and Dolphin Group	Louise Scally Breffni Martin Simon Berrow
13	<b>Noise &amp; Vibration</b>	AWN Consulting	Alistair MacLauren
14	<b>Air Quality</b>	AWN Consulting	Jovanna Arndt
15	<b>Climate</b>	AWN Consulting	Jovanna Arndt
16	<b>Cultural Heritage – Archaeology</b>	ADCO	Niall Brady
17	<b>Cultural Heritage – Built Heritage</b>	7L Architects	Fergal McNamara
18	<b>Interactions of the Foregoing</b>	McCutcheon Halley Planning Consultants	Paula Galvin
19	<b>Summary of Mitigation Measures</b>	McCutcheon Halley Planning Consultants	Paula Galvin

## 1.3 Methodology

In preparing the EIAR the following regulations and guidelines were considered:

- The requirements of applicable EU Directives and implementing Irish Regulations regarding Environmental Impact Assessment;
- Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Reports (European Commission, 2017)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency, May 2022).
- Guidelines on Information to be Contained in Environmental Impact Statements (EIS) (Environmental Protection Agency, 2002)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).

In addition, contributors have had regard to other relevant discipline-specific guidelines, these are noted in individual chapters of the EIAR.

Each chapter of this EIAR assesses the direct, indirect, cumulative, and residual impact of the proposed development for both the construction and operational stage of the proposed development.

The identified quality, significance, and duration of effects for each aspect is primarily based on the terminology set out in the EPAs Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022) as summarised in the following table:

**Table 2 Impact Rating Terminology**

Quality of Effects	
<b>Positive</b>	A change which improves the quality of the environment (for example, by increasing species diversity; or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
<b>Neutral</b>	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
<b>Negative/Adverse Effects</b>	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Significance of Effects	
<b>Imperceptible</b>	An effect capable of measurement but without significant consequences.
<b>Not Significant</b>	An effect which causes noticeable changes in the character of the environment but without significant consequences.
<b>Slight Effects</b>	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
<b>Moderate Effects</b>	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.



<b>Significant Effects</b>	An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
<b>Very Significant</b>	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
<b>Profound Effects</b>	An effect which obliterates sensitive characteristics.
<b>Duration &amp; Frequency of Effects</b>	
<b>Momentary Effects</b>	Seconds to minutes
<b>Brief Effects</b>	Less than 1 day
<b>Temporary Effects</b>	Less than 1 year
<b>Short-term Effects</b>	1-7 years
<b>Medium-term Effects</b>	7-15 years
<b>Long-term Effects</b>	15-60 years
<b>Permanent Effects</b>	Over 60 years
<b>Reversible Effects</b>	Effects that can be undone, for example through remediation or restoration.
<b>Frequency of Effects</b>	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
<b>Extent &amp; Context of Effects</b>	
<b>Extent</b>	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
<b>Context</b>	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
<b>Probability of Effects</b>	
<b>Likely</b>	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
<b>Unlikely</b>	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
<b>Type of Effects</b>	
<b>Indirect Effects</b>	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
<b>Cumulative Effects</b>	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
<b>Do Nothing Effects</b>	The environment as it would be in the future should the subject project not be carried out.
<b>Worst-case Effects</b>	The effects arising from a project in the case where mitigation measures substantially fail.
<b>Indeterminable Effects</b>	When the full consequences of a change in the environment cannot be described.
<b>Irreversible Effects</b>	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
<b>Residual Effects</b>	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
<b>Synergistic Effects</b>	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SO <sub>x</sub> and NO <sub>x</sub> to produce smog).

## 2 Project Description

**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.4.88 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.

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.



**Figure 2 Proposed Site Layout (extract from Drg.No. 2100, prepared by CSEA)**

### 3 Alternatives Considered

The Planning and Development Regulations, 2001, as amended, require;

*“A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment”.*

Reasonable alternatives may include project design proposals, location, size and scale, which are relevant to the proposed development and its specific characteristics.

The Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports states:

*“The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with ‘an indication of the main reasons for selecting the chosen option’. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or ‘mini-EIA’) of each alternative is not required.”*

The Guidelines also state that the range of alternatives considered may include the ‘do-nothing’ alternative.

Accordingly, this chapter of the EIAR provides an outline of the main alternatives examined during the design phase. It sets out the main reasons for choosing the development as proposed, taking into account and providing a comparison on the environmental effects. The assessment of alternatives is considered under the following headings;

- i. Do Nothing Alternative
- ii. Alternative Locations
- iii. Alternative Uses
- iv. Alternative Design
- v. Alternative Processes

#### 3.1 Do-Nothing Alternative

##### 3.1.1 Do Nothing – Actual

Under the 'Do-nothing' scenario, the proposed development site at Greenore Port would continue to be used primarily for existing port operations and storage. This is expected to be a temporary situation due to policies encouraging the development of Irish ports, especially for the offshore renewable energy (ORE) industry on the east coast.

In this scenario, the development's impacts, such as increased traffic and noise pollution, would not occur. However, this would lead to inefficient use of the site and the loss of significant employment

opportunities. Potential tenants would need to find alternative locations, risking the permanent loss of these jobs from Co. Louth.

The predicted effects of the 'Do-nothing' scenario are likely and would last at least short-term (1-7 years), during which another development proposal might arise. Ultimately, the 'Do-nothing' scenario is deemed inappropriate and unsustainable, preventing the strategic planning objectives for the area from being met. With proposed mitigation measures and no significant environmental effects expected, the comparative environmental impacts are not enough to rule out the proposed development.

### **3.1.1.1 Do Nothing – Extant Permissions**

There are two extant planning permissions at Greenore Port for the extension and modification of an existing Warehouse (LCC Planning Ref 20268/ABP Ref 307862) and a new Warehouse (LCC Planning Ref 20543/ABP Ref 310184). As these are valid permissions the respective developments must be considered as a possible scenario under the 'Do Nothing' Scenario.

In this scenario, impacts of the proposed development wouldn't occur since only one of these developments could be implemented. Both would generate additional traffic and noise during construction and operation, affecting local residents and fauna. The development associated with the extant permissions would create additional jobs, but not to the same extent as the proposed development, leading to missed employment opportunities for Louth's rural community.

Visually, either extant permission would negatively impact Greenore village due to their design, height, materials, massing, and lack of landscaping. ORE Operators would have to seek alternative sites for their OMF, risking the permanent loss of employment opportunities in Co. Louth.

The 'Do Nothing' scenario's effects are expected to last short-term (1-7 years), allowing time for another development proposal. While implementing either existing permission would intensify site use and be visually intrusive, it aligns with the port's strategic location. However, these developments did not require an Environmental Impact Assessment Report (EIAR), so mitigation measures are limited, potentially impacting the environment accordingly.

## **3.2 Alternative Locations**

The proposed development must be located at a port due to its essential role in the offshore wind energy sector and much needed energy transition, particularly in construction, operations, and maintenance (O&M). Ports need significant infrastructure investments to provide these services, presenting both a challenge and an opportunity for growth in sustainable business.

Greenore Port is ideally suited for providing O&M services for forthcoming wind farms in the North Irish Sea. The development will be carried out by Greenore Port and leased to future offshore renewable energy (ORE) operators. Greenore Port, privately owned by Greenore Port Company (a subsidiary of Doyle Shipping Group), has no alternative locations due to its specific landownership. Thus, there are no alternative locations for the proposed development.

Location alternatives within the site boundary are discussed in the section *alternative design*.



### 3.3 Alternative Uses

The primary determinant of suitable uses is established in the site's zoning. Under the Louth County Development Plan 2021 – 2027, the site is identified within the Settlement Boundary for Greenore with no land use zoning pertaining the site or the wider village area.

The guidance and policy context within Chapters 5, 9, and 13 of the Plan support the development of the Port whilst also ensuring that any development would be sensitive to the surrounding environment. Development at Greenore Pot is subject to Policy Objective **PO EE 27**:

*“To recognise that the Port facilities at Drogheda, Greenore, Dundalk, and Clogherhead are an important economic resource and to **support any improvements or expansion to these Port facilities** at Drogheda, Greenore and Clogherhead and the consolidation of Dundalk Port, subject to the preparation of a Masterplan and appropriate environmental considerations.”(emp. added)*

In the absence of zoning for the site and having regard to PO EE 27, there are no potential alternative land use scenarios for the proposed development site that are not related to the improvement/expansion of a port facility.

### 3.4 Alternative Design

The project team have undertaken extensive consultations with potential future tenants to understand their requirements for an Operations and Maintenance Facility. Based on these discussions and consultation input, 3 different layouts and development concepts have been prepared and assessed from a commercial and environmental perspective.

**Table 3 Overall Development Breakdown Options 1 - 3**

Breakdown	Option 1	Option 2	Option 3
No. of Potential Operators	3	4+	3
Offices	Three separate units with circa. 1,200sqm of office space each	Standalone building with circa. 4,400sq.m of office floorspace	Three separate units combining office and warehouse in one shell with circa. 900 sqm of office space and ancillary welfare and plant facilities each.
Warehousing/workshops	Three separate warehouse units of circa. 800sqm each	Single large internally divided warehouse unit of circa. 3,200sq.m in total.	Three separate units combining office and warehouse in one shell with circa. 760sqm warehouse space each.
Parking	65 spaces adjacent to Quay serving each Office Warehouse unit. 135 spaces within satellite parking area circa 100m to closest unit via pedestrian route to rear of housing on Euston Street.	135 spaces adjacent to Quay and 135 spaces within satellite parking area circa 100m from closest unit and 50m from Office facility via pedestrian route to rear of housing on Euston Street.	76 spaces adjacent to Quay and 135 spaces within satellite parking area circa 100m to closest unit via pedestrian route through the Port's lands.
Marine Infrastructure	70m New Quay Wall Pontoon Infrastructure with 10 CTV berths	70m New Quay Wall Pontoon Infrastructure with 12 CTV berths at O&M site and up	70m New Quay Wall Pontoon Infrastructure with 9 + 2 Layover CTV Berths

		to 10 satellite berths between berth 1 and the ferry terminal.	
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Option 3 was chosen over the other options 1 and 2 due to the fact that it concerns the least possible impact on the environment when compared to Options 1 and 2. This option has a number of environmental benefits when compared to the other alternatives considered. More specifically:

- It will result in the least possible visual impact to the local residents and amenities due to the compact building form of the proposed units and the careful design of the materiality.
- Least impact on the heritage of Greenore Village and safeguarding of heritage features for the future.
- The proposed pedestrian access link from the surface car park at Shore Road is an improved design to avoid noise and overseeing impacts on local residents of Shore Road.

From a commercial perspective Option 3 also fulfils most requirements of potential future tenants and is therefore the most economically viable for the applicant and future operators.

## 3.5 Alternative Processes

### 3.5.1 Disposal of Dredge Material

To facilitate navigable access and suitable berthing for the CTVs it is necessary to carry out dredging between the existing groyne, Berth 2, and proposed Berth 3. The declared depth of this dredge pocket is -4m CD, resulting in dredge material of c.45,000m<sup>3</sup> soft dredge (gravel, silt, sand, clay) and c1,000m<sup>3</sup> rock arisings.

Processing on land or dump at sea were considered as options for the dredge material.

If processed on land the material may be classed as by-product under 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)). The material may therefore achieve a higher ranking in the Waste Hierarchy (Prevention > Re-use > Recycling > Recovery > Disposal) as per EU Waste Framework Directive, (2008/98/EC). Disposal via dump at sea was therefore excluded from consideration in this application.

### 3.5.2 Helicopter Use

Consideration was given to whether the installation of a helipad, which would allow technicians to fly to the ORE site by helicopter, and drone transport would be a feasible addition to the sea transfer with crew transfer vessels. However, this option was ruled out as it is not essential for future tenants.

## 4 Assessment of Environmental Impacts

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### 4.1 Population & Human Health

The assessment of Population and Human Health is contained within Chapter 4 of Volume II.

#### 4.1.1 Existing Environment

Under the Louth County Development Plan 2021 – 2027 (LCDP), the site is identified within the Settlement Boundary for Greenore. There are no land use zonings for the site or the wider village area, which are designated as a 'Rural Node' / Level 5 settlement. The LCDP recognises the importance of ports, including Greenore Port, to the economic growth and development of the County, and providing international connectivity. The Plan supports the development of the Port whilst also ensuring that any development would be sensitive to the surrounding environment.

Greenore Port is the second largest port in the County, and is Ireland's only privately owned commercial port. It provides marine and logistical support for sectors including, agricultural feed, construction, renewable energy, livestock exports and manufacturing industries. Land uses in the vicinity of the site comprise a mix of industrial, commercial, residential, tourism and agricultural uses.

For this assessment, a study area was selected based on Electoral Division (ED) Areas within a 5km radius of the application site.

According to Census 2022 results, the study area population is 4,954 people. This represents a 4.1% (195 people) increase in population in the period between 2016 and 2022, slightly lower than the growth rate in Louth County in the same period (6.9%).

Of the Study Area population, 80% (3,470 persons) live within the settlements of Greenore and Carlingford (1,250 persons and 2,220 persons respectively). The remainder of the study area population is rural.

In 2022, the average age of those residing in the study area was 39 years, slightly higher than County Louth (38.2 years) and similar to the State average (38.8 years).

Average household size in the study area is 2.93, higher than the State (2.74) and the County (2.83).

The Pobal Deprivation Index scores areas in terms of affluence or disadvantage. In the study area, scores range from 1.51 ('Marginally Above Average') for Greenore Port to -1.42 for Carlingford ED ('Marginally Below Average').

In terms of education, Census 2022 data indicated that 16.9% (557 persons) had completed lower secondary school and 18.6% (611) had completed upper secondary school. A further 30.1% in the Study area have attained a tertiary-level qualification.

The majority (54%) of the working age cohort (aged 15-64 years) within the study area are employed. The data reveals the main occupations in the study area were Professional Occupations (16.5%) and Skilled Trades Occupations (15.4%), followed by Associated Professional and Technical occupations (11.4%) and Administrative and Secretarial Occupations (10.4%). Approximately 63% of locals work in

Dundalk, followed by approx. 27% in Dublin City and suburbs, Counties Dublin & Meath, and approx. 8% in Drogheda, County Louth & Meath.

Primary sensitive receptors within the study area are the communities and properties likely to be directly affected by the project including the following categories:

- i. Existing Residential
- ii. Existing Commercial;
- iii. Social, Community and Leisure users; and
- iv. Users of the public road network surrounding the site

The consideration of potential impacts on human health is examined separately within the EIAR. Where relevant, each of the chapters identify the sensitive receptors of greatest interest to their respective topics and in the case of Air Quality, Noise and Traffic, this includes the populations living in residential locations in close proximity to construction or operational activities identified as sensitive receptors

## **4.1.2 Impact Assessment**

### **4.1.2.1 Do Nothing Scenario**

Under a 'Do-nothing' scenario, the existing port would likely continue in its current use. The existing area would remain operational for the purposes of port use. Any intensification of activities will be controlled by the port's existing health and safety procedures and no negative impacts are predicted in relation to land based activities and the effect would be neutral.

There are two extant planning permissions at Greenore Port for the extension and modification of an existing Warehouse (LCC Planning Ref 20268/ABP Ref 307862) and a new Warehouse (LCC Planning Ref Planning Ref 20543/ABP Ref 310184). As these are valid permissions the respective developments must be considered as a possible scenario under the 'Do Nothing' Scenario.

The development of either extant planning permission is considered to result in increasing port activity as the port could accommodate larger volumes of bulk goods, in line with the permissions approved.

In the event that the proposed development does not proceed, an opportunity to develop the port as a flagship Headquarter facility supporting the Offshore renewable energy industry combined with diversification of port uses and providing a 'cleaner' future for the port is missed.

### **4.1.2.2 Demolition & Construction Phase**

#### **4.1.2.2.1 Marine and Land Use**

The proposed development is an upgrade to an existing operational port. During both the construction and operational phases, the development site would not result in a change of marine / land use at this location. Additionally, given that the proposed development represents a 'lighter' port activity than the existing operations, the surrounding amenities will not be significantly impacted by the proposed development.

Development at this site also aligns with National Planning Framework (NPF) policy that encourages more people and more jobs and activity within existing cities, towns and villages. The impact is likely and will have a permanent significant positive effect that will achieve local and wider county, regional and national objectives.

The impact associated with the upgrade during the Construction Phase shall be **minor, neutral, local, and short-term**.

It is anticipated that the projected 70 construction staff will not generate a temporary increase in population locally and thus the likely impact on settlement patterns is **neutral**.

#### 4.1.2.2.2 Population

It is estimated that during peak construction in construction phases 1 and 2, there will be approximately 70 people employed. Phase 1 will take approximately 16 months to complete and phase 2 approximately 20 months. It is not anticipated that this will generate a temporary increase in population locally during this period as employees will travel to the site from their existing place of residence.

No significant impact on population in this regard is identified and the likely impact on the population is thus **neutral**.

#### 4.1.2.2.3 Employment & Economy

A key characteristic of the proposed development in terms of its potential economic impact relates to its capital value. The construction phase will provide a boost for the local construction sector in terms of employment generation and capital spend on materials and construction labour costs. It is expected that during peak activities (approximately 70 people will be working directly on the construction site), capital spend on materials and construction labour costs, and it will generate additional spending in the local economy (including local cafes) as a consequence of the presence of construction staff during the construction phase.

The construction staff will comprise of managerial, technical, skilled and unskilled workers. As far as practicable local labour will be employed.

In addition to direct employment on-site, there will be substantial off-site employment and economic associated with the supply of construction materials and provision of services such as professional firms supplying financial, architectural, engineering, legal and a range of other professional services to the project.

The overall predicted impacts associated with the construction phase on the working population and local economy are **likely** and will have a **positive, temporary/short-term, not significant** effect.

#### 4.1.2.2.4 Residential Amenity and Community Facilities

The anticipated likely significant effects in the absence of mitigation on residential amenities and community facilities including Greenore Golf Club relate to disruption due to increased construction traffic movements on the local road network, noise, dust and visual impact arising from plant and construction activities (e.g. cranes, hoarding etc) necessary to complete the development.



The construction phase will cause a certain amount of loss of amenity, disruption, nuisance and inconvenience to the local community, particularly the receptors closest to the development i.e. the Village and Shore Road Residents and Greenore Golf Club.

Potential effects on human health arising during the construction phase of the project relate generally to quality of life including air quality, climate, noise, water and hydrology, waste, potential disruption of services and the risk of major accidents/disasters.

The level of disturbance and impacts are predicted to be commensurate with the normal disturbance associated with the construction industry where a site is efficiently and properly managed having regard to neighbouring activities.

In the absence of mitigation, the anticipated impact on residential amenity would be **local** and of **temporary to short-term** duration with a **moderate** significance.

#### 4.1.2.2.5 Human Health & Safety

During the demolition and construction phase, health and safety risks will arise from construction activities, including operation of plant and machinery. A construction related accident could pose a potential health and safety risk to construction workers, port employees or visitors to the port site. Construction safety will therefore be closely controlled by the Contractor and implementation of construction safety arrangements.

Furthermore, the Applicant is an experienced port operator who has managed many construction phases in the past, and during this period no major accidents or fatalities have occurred. The construction site cannot be freely accessed by members of the public and unauthorised access would be considered trespassing on private property.

On this basis, risk of health and safety related accidents are **unlikely** during the demolition and construction phase of the proposed development, no significant impacts on population and human health are identified. With best practice health and safety procedures in place, construction activities will have a **negligible, neutral, short-term** impact on health and safety.

Measures to address such human health considerations will be mitigated through the implementation of a Contractor's Construction and Environmental Management Plan (CEMP) and will be subject to Regulations and the relevant Health and Safety codes.

#### 4.1.2.2.6 Local Amenity and Tourism

Given that construction of the marine infrastructure of the proposed development is scheduled during the winter and limited to the immediate port environs, recreational users of Carlingford Lough are unlikely to experience disruptions. The CTV operators' adherence to robust safety management procedures will ensure safe operations, thereby minimising any adverse effects on recreational users.

The construction of the proposed development including the dredging campaign could lead to increased sedimentation rates and contamination/pollution of the water body. In the absence of mitigation, the anticipated impact on the local shellfish aquaculture industry would be negative, local and of temporary to short-term duration with a moderate significance.

As set out before, the construction of the proposed development will not have an impact on the operation of the existing ferry, heritage value of the village, surrounding landscape and sea scape.

No significant impact on tourism associated with the Construction Phase is identified.

#### 4.1.2.3 Operational Phase

##### 4.1.2.3.1 Marine and Land Use

The proposed development is an addition to an existing operational port. During both the construction and operational phases, the development site would not result in a change of land use at this location. Additionally, given that the proposed development represents a 'lighter' port activity than the existing operations, the surrounding amenities will not be significantly impacted by the proposed development.

The impact associated with the upgrade during the Construction Phase shall be **minor, neutral, local, and short-term**.

The proposed development will contribute to the establishment of appropriate enterprise and employment uses at the established and strategically well located Greenore Port.

The design of the buildings incorporate energy efficiency measures that will ensure the occupied spaces (offices) meet the requirements of Near Zero Energy Building (NZEB) regulations set out in TGD Part L 2021. High standards of architectural design, in tandem with a comprehensive landscape strategy have sought to ensure the best use of land, and ensure the development makes a positive contribution to this attractive port setting.

It is anticipated that delivery of a high-quality commercial development in a highly landscaped setting at this location will result in **a likely significant positive impact** with a **permanent** duration.

##### 4.1.2.3.2 Population

The proposed development will generate up to 225 new jobs. It is not anticipated that this will generate any marked increase in population locally, as it is envisaged that employees will likely travel to the site from their existing place of residence. The likely impact on the population is thus **neutral**.

The proposed development will provide a **positive long-term** impact in terms of providing additional employment.

##### 4.1.2.3.3 Employment & Economy

The proposed development will support continued sustainable economic growth and quality jobs for the region, consistent with the objectives of the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region and the Louth County Development Plan 2021 – 2027.

The proposed Operations and Maintenance Facility will provide for up to 225 new jobs in a future-proof and sustainable industry, thus creates high quality work opportunities for the local and regional population, the majority of which are in the working age cohort.

Development of this new facility will also support ambitions for planned longer term growth in Ireland and there should thus be an **indirect positive** effect on population and employment generation.

The employment generated by the proposed development will contribute to the professional and skilled trades and engineering jobs in the locality. The overall effect on employment locally and regionally is **moderately positive** and **permanent**.

The employees will generate additional spending within the area which will likely have a **local permanent moderate positive** impact on local economic activity generated through the multiplier effect.

The impact of the operational phase will at least extend to County Louth in terms of the requirement for labour, goods and services. The effect is **likely** and will be **permanently significantly positive**.

The daytime increase in working population is likely to have a **permanent moderate positive effect** on local retail services providers, due to the presence of employees on site and the increased expenditure on convenience goods.

#### 4.1.2.3.4 Residential Amenity and Community Facilities

The operation of the proposed development has limited capacity to impact on residential amenities and community facilities.

Included in the design of the proposed development, consideration was given to the location and route of the pedestrian access from the Shoe Road carpark to the proposed buildings. This was routed through existing port lands, as opposed to an existing lane at the rear of Euston Street, to provide a separation between the pedestrian route and the existing residences, and reducing possible effects of noise or lighting spill.

Visual, traffic, noise and dust effects are considered in Chapters 5, 6, 13 and 14 respectively. These chapters conclude that there will be no significant effects on residential amenities or community facilities attributed to the operational phase.

#### 4.1.2.3.5 Human Health & Safety

##### Port Operations

The main health and safety risks during the operational phase of the proposed redevelopment arise from the operation of plant and machinery.

Health and Safety activities for port operations are guided by national Health & Safety legislation. The occupants will appoint a safety officer who will be responsible for ensuring compliance with these safety procedures.

The project design has taken cognisance of necessary health and safety requirement for port operations and has minimised any increased health and safety risk associated with the development. In addition, the Port's existing Health & Safety procedures will be reviewed to take account of the increased operations at this location. Consequently, increased port operations will have **negligible, neutral** permanent impact on health and safety.

The risk of accidents / unplanned events is addressed through the Building Regulations (Fire Safety) and is therefore addressed through primary mitigation in the design process. Residual risks of fire and road traffic accidents will be managed by emergency services as per their standard procedures.

Measures to address such human health considerations will be subject to Regulations and the relevant Health and Safety codes.

The potential for effects on human health during the operational phase is also dealt with in this EIAR under the more specific topics by which they might be caused including air, traffic, water and noise.

#### Sea & Road Traffic

There is a potential enhanced risk of accidents related to the increase in road and sea freight traffic. The design of the proposed redevelopment and implementation of existing road and sea traffic management operational procedures will ensure that increased traffic has no negative impact on health and safety.

Consequently, in relation to sea and road traffic, the operational phase of the proposed redevelopment will have a **negligible, neutral** permanent impact on health and safety

#### 4.1.2.3.6 Local Amenity and Tourism

No significant impact on tourism associated with the Operational Phase is identified.

As set out above, the proposed development will not have an impact on the operation of the existing ferry, heritage value of the village, surrounding landscape and sea scape and will continue to attract people to visit the area.

During the operational stage collisions of CTV with other commercial or recreational lough users pose safety hazards to health and safety, vessels, and infrastructure. Accidents resulting from such collisions could lead to injuries, damage to property, and environmental consequences. The Navigation Impact Assessment confirms that the proposed CTV construction and operation at Greenore is unlikely to result in collisions, the effect is therefore **negligible, negative** and **permanent**.

The presence of a new pontoon and port activities might introduce invasive alien species from vessels to the area and may cause spillage or other forms of pollution which could affect the local shellfish aquaculture. The Risk Assessment for shellfish aquaculture prepared with regard to the proposed development identifies these potential impacts as unlikely, thus the impact on tourism and the local amenity is **negligible, neutral** and **permanent**.

The proposal provides for a flagship landside development that is critical for the support of the offshore renewable energy industry. Therefore, it will provide for a much cleaner use of port lands.

There is also a growing potential for tourism and education within the perimeter of offshore wind farm areas. Offshore renewable energy developers are typically willing to provide opportunities to show their farms to the public which can be expected to be facilitated from the OMF port at Greenore.

Overall the Operational Phase will have a **long-term, slight, positive** impact on tourism both **locally** and **nationally**.

#### 4.1.2.4 Cumulative Effects

Potential cumulative impacts may arise from the proposed development at Greenore Port when combined with other existing and/or approved projects.

A review of relevant, large scale, recent planning applications was conducted in order to identify sites with the potential for cumulative impacts. Planned and approved projects and plans with the potential for cumulative impacts have been identified in Appendix 1.1 Cumulative Assessment - Projects and Plans. There are several developments in the vicinity of the study area comprising residential, commercial and infrastructure schemes. Extant permissions of the port are not relevant for this section as it's not feasible to implement previously granted developments in combination with the subject scheme.

A number of minor developments have been granted permission within the surrounding area, these are typically associated with extensions or alterations to single buildings.

Larger developments require a construction management plan to mitigate effects of the construction phases. Subject to adherence to measures contained in the individual plans, the cumulative effect is **likely, short term and not significant**.

### 4.1.3 Mitigation

#### 4.1.3.1 Incorporated Design

The proposed development complies with the Building Regulations which provide for the safety and welfare of people in and about buildings. The Building Regulations cover matters such as structure, fire safety, sound, ventilation, conservation of fuel and energy, and access, all of which safeguard users of the buildings and the health of occupants. The design also incorporates the principles of universal design and the requirements of Part M of the Building Regulations so that the development will be readily accessible to all, regardless of age, ability or disability.

The integration of energy efficient measures into the design will provide for a healthy work environment for employees, less dependence on fossil fuels and associated improved air quality. The inclusion of landscaping elements and a highly accessible layout of the scheme including segregated and safety improved pedestrian walkways will provide for a high quality work place for future employees and the enhancements of the public realm and design of the overall layout will improve the setting of the wider village.

#### 4.1.3.2 Demolition Phase & Construction Phase

The following mitigation measures are recommended:

- **Construction and Environmental Management Plan (CEMP):** The appointed contractor(s) will update the Outline CEMP submitted with the application and submit to Louth County Council prior to the commencement of development.
  - The CEMP will comply with all appropriate legal and best practice guidance for construction sites.
  - The purpose of a CEMP is to provide a mechanism for the implementation of the various mitigation measures which are described in this EIAR and to incorporate relevant conditions attached to a grant of permission. The CEMP requires that these measures will be checked, maintained to ensure adequate environmental protection. The CEMP also



- requires that records will be kept and reviewed as required to by the project team and that the records will be available on site for review by the planning authority.
- All construction personnel will be required to understand and implement the requirements of the Contractor's CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.
  - All mitigation and monitoring measures included in the Summary of Mitigation and Monitoring Measures in Chapter 19 of this EIAR will be included in the CEMP and adhered to.
  - **Community Liaison Officer:** The contractor will appoint a liaison officer to ensure that any issues from the local community are dealt with promptly and efficiently during construction. These details will be included in the contractor's CEMP.
  - **Construction Working Hours,** except for dredging and pile driving works, will generally be limited to the hours 0700 – 2000 Monday to Friday and 0700 – 1600 hours on Saturday. Some works have to be undertaken at low tide and their construction hours will be linked to tides (for example works associated with the pontoon construction and quay wall).
    - Pile driving works will be limited to 0800-1800 Monday to Friday and 0800 - 1600 hours on Saturday. It is not envisaged that works will take place on public holidays.
    - Dredging, due to the nature of the activity, is undertaken on a 24 hour basis to achieve the maximum production rates within tidal envelopes Dredging activities will occur for approximately 8-10 weeks.
    - If works are required outside of these hours, in exceptional circumstances, the planning authority will be notified in advance
  - Project supervisors for the construction phase (PSCS) will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013, and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phase.
  - The Resource Waste Management Plan (RWMP) will be updated by the Contractor, as necessary, as per mitigation outlined in Chapter 8.
  - **Aquaculture Protection:** All suitable and appropriate mitigation measures included in the Risk Assessment for Shellfish Aquaculture are recommended to be deployed during the dredging works and included in the Contractor(s) CEMP.

#### 4.1.3.3 Operational Phase Mitigation

The proposed development is designed to modern standards that incorporate measures that reduce risks to and enhance amenity in terms of population and human health. The impact assessment section did not identify likely significant environmental impacts on population and human health arising from the operational phase of the proposed development. Accordingly, other than the mitigation measures outlined by others in this EIAR relating to human health, no further mitigation measures are proposed with respect to population and human health.

#### 4.1.4 Residual Impact Assessment

It is anticipated that the proposed development will realise significant positive overall economic benefits for the local community and the wider local area.

Strict adherence to the mitigation measures recommended in this EIAR will ensure that there will be no negative residual impacts or effects on Population and Human Health from the construction and operation of the proposed scheme. Indeed, the delivery of this high quality commercial development at the site will realise a **likely significant positive** effect of **permanent** duration for the local area.

#### 4.1.5 Monitoring

Measures to avoid negative impacts on Population and Human Health are largely integrated into the design and layout of the proposed development. Compliance with the design and layout will be a condition of any permitted development.

No specific monitoring is proposed in relation to this section. Monitoring of standard construction mitigation measures as outlined in this EIAR will be undertaken by the appointed contractor.

## 4.2 Landscape & Visual Character

The assessment of Landscape & Visual resources is contained within the Landscape and Visual Impact Assessment (LVIA) Chapter 5 of Volume II.

### 4.2.1 Baseline Environment

The proposed site is located at Greenore Port, Greenore, Co. Louth which includes within the existing active port lands and a former residence adjoining the southeast end of the port's yard, locally known as Barbara's field.

The site's topography is flat with an elevation of approx. between 3-5m AOD. The site boundaries include a mix of low stone walls along Barbara field end and taller stone and plastered walls contain part of the port boundary off of Euston Street, Anglesey Terrance and Greenore golf course. The Northern end of the site opens onto the existing port yard and Carlingford Lough. Vegetation cover is limited given the site's industrial setting. The greatest vegetation cover is within the site's Barbara's field end, reflective of its former residence land use with a mix of grasses, mature shrubs and some individual trees. The small open area next to the port offices and carpark, off Euston Street, contains some small beds and grass open space with some mature trees. A section of the ports retained boundary wall with the adjoining golf course is heavily vegetated by climbers in places on the golf course side which softens this structure. Also of note is the heavily ivy-covered eastern water tower, which is just outside of the site.

This end of the site which includes the carpark and open green to the front of the port offices is the only part of the site which falls within the Greenore Architectural Conservation Area (ACA). This designation includes much of the surrounding residential areas with their district character which are reflective of the settlement history as a purpose-built port in the 19<sup>th</sup> century. The existing port has some historical elements including the two distinct water towers at either end of the port offices, which fall outside of the site but which their setting has been carefully considered within the overall design of the proposed development. Similarly, within the site are the remains of the old engine room wall which will be retained and form a feature within the proposed development.

The nearest group of residences include those along the terrace housing on Anglesey Terrace and Euston Street. There are also four individual residences directly south of the Barbara field part of the site and Shore Road. While several of the larger historical houses can be found slightly further southwest along the edges of the village off the R175 road.

Outward views from the site looking southwards towards Greenore village are in places limited by the high boundary walls and buildings. The greatest views being from the Barbara end due to its wall looking directly out onto the backs of nearby residences. While the northern end of the site open ends allows for more wider views across Carlingford Lough. Similarly, inward views from the surrounding receptors are also limited, with the greatest views from some of the nearest residential receptors and golf course visitors. Such existing views include to varying degrees the existing port buildings including the former open hydro building, offices, silos and the historic elements along with moveable elements in the form of cranes and docking ships.

There will also be some more distant views from the southern and northern side of Carlingford Lough, including from designated protected views along the local road network and local residences, where part of the site is visible along with the other port elements. Typically, these views are looking across Carlingford Lough back towards the port open northern end, where the port forms a minor element within the broader landscape.

The wider surrounding landscape is characterised by its setting within the Cooley Lowlands and Coastal Area Landscape Character Area (LCA) and Border-Carlingford Lough Seascape Character Area (ACA). Dominated by Carlingford lough and the steep sloping hills on either side of the lough. The area is predominantly under agricultural land use supported by small settlements, including Greenore and Carlingford on the south of the Lough and small settlements like Greencastle on the northern shores within Northern Ireland. Given their coastal setting many of the small settlements support a range of small marine industries and tourism. Along the southeastern end of Greenore village is a collection of large-scale warehousing reflecting its port facility which is unique amongst these small settlements. The surrounding hinterland is a mix of improved farmland on the lower slopes and moorland on the higher slopes.

## **4.2.2 Impact Assessment**

### **4.2.2.1 Do Nothing Scenario**

Were the proposed development not to proceed there is the potential that the previously granted planning permissions for an extension and modification of existing warehouse, (LCC Planning Ref 20268, ABP Ref 307862) or the approved additional warehouses ( LCC Planning Ref Planning ref 20543, ABP Ref 310184) could be developed out in order to secure continued economic growth for the port business.

Both developments have been deemed by both LCC and ABP planning authority as having acceptable levels of change to the existing landscape character and changes to existing views as experienced from nearby residential receptors and broad views across Carlingford Lough.

The proposed development seeks to have a lesser adverse impact upon the landscape and visual receptors than the above developments, as achieved through a higher quality design layout which was assessed as part of the LVIA.

#### 4.2.2.2 Demolition & Construction Phases

The LVIA assessed separately the initial phases of the proposed development on the identified landscape and visual receptors. The works involved will include the initial site clearance and build out of the proposed scheme, occurring over a phased period. The nature of the site works means that it will be hard to clearly differentiate between the two-phase types. Along with direct effects of the works happening within the site limits there will also be some localized indirect effects because of increased personnel and vehicles coming to/from the site within any approved operating hours. As with any construction activity these will have adverse effects and be of a temporary nature.

Overall, the LVIA assessment found that there are no potential significant landscape and visual effects during the proposed development's demolition and construction phases.

#### 4.2.2.3 Operational Phase

##### 4.2.2.3.1 Landscape Effects

The proposed development will be located within the existing working Greenore port lands and on the lands of a former uninhabited residence. A small portion of the site falls within the northern end of the Greenore ACA, which has been designated for its rich architectural heritage directly linked to the founding of the Greenore port and former railway line. Most of the proposed development is located within the main port lands and through the proposed design is systematic to the setting of the port and ACA with the retention of the old engine room wall and not affecting other heritage elements outside of the site. The main changes will occur across large areas on the western end of the port and its northern shoreline. There will be some limited impact on vegetation including the loss of 7 trees (1 due to poor health) and some ornamental shrub/grass cover to accommodate the works.

The proposals are supported by a broad range of hard/soft landscape measures to help mitigate for the integration of the proposed scheme into the receiving landscape. This includes compensating for any losses of vegetation with additional tree planting and mixes of vegetation cover that help enrich the existing biodiversity of the site to provide net gains.

The proposed landscaping and concepts are indicated on the set of Landscape Masterplans (see Dwg 22396-2-101, 102A, 102B, and 103) and within the Landscape Design Report which accompany this application.

The overall landscape effect will be of **medium magnitude of change and the significance of effect is Moderate Significance Permanent and Neutral qualitative.**

##### 4.2.2.3.2 Visual Effects

The visual assessment in the LVIA has considered the potential views of the proposed development across its various phases from 15 selected representative views located throughout the study area.

The greatest potential for visual changes will occur to those receptors located within the immediate vicinity of the port which includes both residential and recreational receptors. While further away the

changes become less perceptible when viewed amongst the backdrop of other port elements and wider landscape.

Key changes include the removal of the existing former open hydro building and storage yard area and replacement with the three new buildings and associated landscaping. Views of the former engine room wall will be retained, having been previously approved for removal by other recent applications. There will also be enhancement of the existing interface between the existing port offices and Euston Street, improving the visual character of this part of the ACA. While there will be some localised visual changes around the Barabara's Field end of the Site.

Overall, changes to the existing receptors views of the port as a result of the addition of the proposed development will result in significance effects ranging between **No Change to Significant, Permanent, with the quality of effects ranging between Neutral to Beneficial/Positive.**

#### 4.2.2.4 Cumulative Impact

A review of other planning applications within the study area including the mix of application types and scale as outlined within Appendix 1-1 of the EIAR. However, there are no applications, pending or approved but not yet constructed which could be considered to have the potential for any notable cumulative landscape or visual effects with the proposed development. Therefore, there are no significant cumulative landscape and visual effects at the time of this assessment and none are considered any further in this assessment.

Similarly, there are no potential cumulative landscape or visual effects with the port's developments already approved but not constructed (new warehousing (LCC Planning Ref Planning ref 20543, ABP Ref 310184) and extension of the existing former open hydro building (LCC Planning Ref Planning ref 20543, ABP Ref 310184) as it is deemed not feasible to build these applications if the proposed development proceeds.

### 4.2.3 Mitigation

#### 4.2.3.1 Incorporated Design

The proposed design through its evolution has placed a great emphasis on integrating the proposed development into the receiving landscape through respecting and enhancing the existing character of the port lands and surrounding Greenore ACA. These measures include:

- The careful design and placement of buildings to create new elevations, features and focal points in the views available. While offset from the historic structures within the port so to not impact on their visibility.
- The softening of the setting and framing of the elevations with the proposed planting mixes including trees, specimen shrubs and hedgerow to reduce the visual mass of the new building, soften and integrate the development over time from various viewpoints, as identified in the assessment, thereby minimising the visual impacts and generally enhancing the current outlook for many viewpoints. As outlined in the set of landscape masterplans which accompanies this application.
- Tree and shrub planting to help break up the carparking areas throughout the site and implementation of suitable SUD planting in the carparks.



- The design of the public realm scheme at the end of Euston Street to a high standard and seamless integration of the Port end off Euston Street and surrounding streetscape within Greenore ACA.

The design has considered the movement of vehicles, cyclists and pedestrians within the site and surrounding area and improves upon the existing access to minimise disruption. Proposed pedestrian routes through the site will have strong legibility by using contrasting paving materials. Integration of the proposed planting with other proposed services so that these services don't affect the new planting and existing vegetations long term growth and maintenance.

#### 4.2.3.2 Demolition and Construction Phase

During the demolition and construction for all phases there will be a change to the landscape and there will be adverse visual impacts for residents and visitors to the areas adjacent to the site associated with construction activity.

The remedial measures proposed revolve around the implementation of appropriate site management procedures – such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated somewhat through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.

The retained trees along the boundaries will be protected by installation of fencing in accordance with BS5837:2012: Trees in Relation to Construction around the root protection areas (RPAs) as per Arboricultural Impact Assessment (AIA).

Site hoarding will be appropriately scaled, finished and maintained for the period of construction of each section of the works as appropriate. To reduce the potential negative impacts during the construction phase, good site management and housekeeping practices will be adhered to. The visual impact of the site compound and scaffolding visible during the construction phase are of a temporary nature only and therefore require no remedial action other than as stated above.

Adverse impacts both during construction will be short-lived and superseded by the completed new development.

#### 4.2.3.3 Operational Phase

While the proposed development is to occur in two phases the landscape and visual mitigation will be similar through these phases and being fully implemented at the end of the two phases completed construction phase.

These measures will include:

- Lighting has been designed to minimise the potential for light spillage into the surrounding area through the use of suitable directional lighting centred to fall within the site. The lighting will be only on as required to provide safe access through the site during operations and for security cover of the site.
- Traffic – The site layout has been designed, for each phase, so that there is adequate accommodate within the site lands to allow for the parking of employee's vehicles of the

OMFs and those of the existing Port operations so that no parking will occur within the surrounding streets. So, to minimise disturbance to local residents and character of the ACA.

- Maintenance- The proposed landscape, which will be fully implemented by the end of Phase 3, consists of robust planting species specifically selected to cope with the harsh coastal environment so to minimise the risk of planting failures. The proposed and existing planting will be maintained through the operation phase to ensure the new planting becomes established and matures over time to help integrate the site's proposed built elements into the landscape and also soften views of these new structures from receptors in the surrounding areas identified in this assessment as per the intentions of the landscape masterplan proposals.

#### 4.2.4 Residual Impact Assessment

There are no significant residual landscape effects associated with the proposal. The highest landscape effect will be of '**Moderate**' significance at Construction Stage, and of '**Moderate**' significance at Operational Stage.

There are a range of visual effects, from No Change to the existing view through to Significant effects. The phased nature of the proposed development means these effects range between temporary to permanent duration across the site lands. However, only those deemed as **Moderate-Significant** or **Significant** occur within very close proximity to the site as experienced from Viewpoint 2 at the northern end of Euston Street and Viewpoints 4 and 5 on Anglesey Terrace.

There will be no cumulative landscape and visual residual effects.

In light of the development lands recent planning history approvals and planning policy for the county ports, development of this site would appear to be inevitable. It is considered likely that any proposed viable portside development is likely to give rise to landscape & visual effects of a similar, if not higher, nature. While the intensification of land use in the site is a change that cannot be wholly mitigated, this application's proposals layout reflects a higher quality design than that of previous recent proposals for the port. This is likely to result in an overall beneficial effect locally and to the wider area.

#### 4.2.5 Monitoring

The landscape mitigation and enhancement measures are incorporated into the proposed development's landscape masterplan, see these applications accompanying landscape plans and design report.

The masterplan proposals include a range of hard and soft landscaping. The soft landscape measures include the retainment of existing trees, and planting of grasses, wildflowers, climbers, shrubs, hedges, and trees. The successful establishment of the proposed planting will be key to helping to fully integrate the Proposed Development's built structures into the surrounding landscape and provide a visual buffering of the Proposed Development's built elements from surrounding visual receptors. The mitigating effects of which have been considered when determining the predicted landscape and visual effects in the assessment above.

To ensure the success of the proposed landscape planting and retained vegetation, implemented during the construction phase, the appointed landscape contractor will be required to undertake and maintain the planting in accordance with the proposed landscape plans, specifications and maintenance for a defects period of 3 years or as otherwise agreed by Louth County Council. Thereafter the landscaping will be maintained in perpetuity consecutive 12 months periods. This regular maintenance/inspection of the planting across the Proposed Development helps to ensure the planting becomes established over the initial years and that any failed planting is duly replaced.

### 4.3 Material Assets: Traffic & Transport

The assessment of Traffic and Transport is contained within Chapter 6 of Volume II.

Chapter 6 '*Material Assets: Traffic & Transport*' describes the existing receiving road network and provides baseline receiving road network traffic conditions and an assessment of likely traffic and transportation effects arising from the proposed development.

The technical information in Chapter 6 is drawn from a detailed Traffic and Transport Assessment (TTA) which accompanies the planning submission. Principally by reference to the TTA technical information, Chapter 6 assesses and evaluates the likely effects of the proposed development on the existing and future transportation system in the vicinity of the site, as well as identifying proposed mitigation measures to minimise any identified effects arising from the proposed development at Greenore. The material assets considered in this traffic chapter include pedestrian, bicycle, public transport infrastructure and associated services in addition to the local road network and associated junctions.

#### 4.3.1 Existing Environment

The proposed development site is located at Greenore. The development site primarily incorporates lands that are part of the existing port. The development site will ultimately be serviced by Local Road L70661 Euston Street with a secondary access provided to a satellite car park on R175 Shore Road which will be provided with a dedicated pedestrian link to the exiting Greenore Port administration buildings and the proposed development.

Baseline Traffic Surveys were conducted in May 2023 and included classified turning count surveys on the public road network in the vicinity of the site using CCTV together with 2-week long continuous Automatic Traffic Counter (ATC) surveys which included data collection for the receiving Regional Road network together with L70661 Euston Street. The baseline data included an ATC survey site on R175 Shore Road close to the port access and this enabled the baseline traffic data to be validated and calibrated against long term weighbridge records for the port, spanning 3 years. In the interest of a robust and thorough study, the assessments of traffic impacts include for the recorded average baseline traffic conditions on the receiving roads and also include for a separate upper value baseline sensitivity analysis. Both sets of data are carried through numerical and statistical analyses and are both used in the detailed modelling assessment of the effects of development traffic on the capacity of the receiving roads infrastructure including effects on queuing and delay.

## 4.3.2 Impact Assessment

### 4.3.2.1 Do Nothing Scenario

In the Do Nothing scenario it is expected that the traffic environment will remain as per the baseline.

### 4.3.2.2 Demolition Phase

Demolition activities associated with Phase 1 and Phase 2 will require materials to be exported from the port. All HGV arising from demolition activities will use the port access on Shore Road. Some staff involved in demolition will use Euston Street but the numbers will be limited and the majority of staff and light vehicles will use Shore Road to access the site. The peak activities during demolition will not generate significant volumes of staff or HGV. Demolition is not considered likely to give rise to intense traffic generation activity. The demolition program will be scheduled and co-ordinated with port activity so that the combined traffic generation to and from the port access does not exceed current levels. The impact of traffic arising from demolition will not be significant.

### 4.3.2.3 Construction Phase

The assessment includes traffic arising from construction activities associated with both Phase 1 and Phase 2. The activities that are considered the most significant generators of construction traffic include dredging which will require materials to be exported from the port and construction of the quay wall which will require the importation of materials including stone and concrete. During construction there are likely to be occasional short periods of intense activity, for instance during concrete pours, where perhaps 50 no. HGV might be generated in one day. This figure is likely to be limited due to the site location and availability of materials. The construction program will be scheduled and co-ordinated with port activity so that the combined traffic generation to and from the port access does not exceed current levels during periods of greater construction HGV traffic generation. Construction HGV traffic combined with existing port traffic will not exceed the values used in the upper value road network assessments. Given that car traffic and HGV traffic generation during construction will not exceed those values already included in the assessments of operational traffic it is concluded that the impact of construction traffic will not have a significant impact upon the capacity and operation of the receiving road network.

### 4.3.2.4 Operational Phase

The main corridor upon which the new traffic generated by the operation of the development will have an impact is R175 and R176 accordingly the scope of opening year and future year assessments focuses on the operation of the affected junctions. The detailed assessments of the effects of the proposed development on the operation and capacity of the receiving road network confirm that the existing roads and travel infrastructure is suitable to accommodate the forecast traffic arising from the proposed development. The various 'do-nothing' and 'do-something' traffic flow scenarios have been assessed for the Opening Year 2026, Opening Year +6yrs and the Design Year of 2041. The future year assessments include for scenarios both with and without the proposed development so that the incremental impact of development traffic can be evaluated. The Transport Research Laboratory suite of programs has been used to assess network junction performance in the identified peak hours. The results of the assessments using the typical average network flows and the upper value flows serve to

demonstrate that the proposed development will not have a significant impact on the operation of the existing receiving road network. The location that will experience the most concentrated level of traffic impact is the junction of R175 Shore Road and L70661 Euston Street. The level of impact on capacity and delay at this junction is considered likely to be practically imperceptible to existing R175 users of the Euston Street junction which will maintain a high level of service. The traffic flows at the junction on weekdays is very low and the numerical analysis shows the proposed development when completed in full has the potential to give rise to an approximate 20-40% increase in peak hour turning traffic at the junction which may be noticeable to existing users of Euston Street. It is noted however that development traffic will be entering the street in the morning against a predominant outbound commuter flow from the area which is characterised by residences. The reverse will prevail in the evening with residents returning and development office/staff generated traffic generally leaving the area. It is noted that daily traffic flows to and from Euston Street recorded in the traffic surveys show that during the weekend traffic flows to and from Euston Street exceed those forecast as likely to arise from the proposed development combined with existing flows during the weekday. The assessment figures include for national road traffic growth and development traffic generation, both of which are considered robust. Applying national road growth rates to the residential cul-de-sac of Euston Street is extremely robust and has been done in the interest of a comprehensive and satisfactorily robust capacity assessment. This notwithstanding, the results of the capacity assessments show that the existing receiving road network is not under peak hour pressure at present and will satisfactorily accommodate the traffic generation by the proposed development without significant negative impact.

#### 4.3.2.5 Cumulative Impact

The road network assessments do not include for specific local developments other than the proposed development. Permitted development and other future development that may give rise to the generation of new traffic on the receiving roads network is included for by the application of TII published growth rates to existing surveyed traffic flows on the receiving road in the study area. The cumulative traffic arising from future economic growth and development resulting in traffic growth on the receiving network are included for in both the 'do-nothing' and 'do-something' road network assessment scenarios. The results of the network modelling analyses confirm that the cumulative effects on the capacity of the receiving road network are not significant.

### 4.3.3 Mitigation

#### 4.3.3.1 Incorporated Design

The proposed development access is achieved through the existing port office entrance at Euston Street which it is proposed will be modified and enhanced in the interest of increases efficiency of vehicular entry and in the interest of pedestrian safety. Access to the new car park is provided directly from Shore Road. The location of the proposed new car park will ensure that Shore Road continues to provide an element of orbital function to Euston Street aiding in the distribution of traffic away from the centre of Greenore. The specific attributes of the scheme design and public realm enhancements at the northern end of Euston Street contributes to achieving objectives of DMURS and

includes well designed pedestrian crossing facilities along the key travel desire lines through the scheme.

#### 4.3.3.2 Demolition Phase

A Construction Traffic Management Plan will be prepared which will also include demolition.

A detailed 'Construction Environmental Management Plan' (CEMP) details the allowable working day, construction traffic, parking arrangements and incorporates environmental protection measures. The CEMP covers demolition activities.

#### 4.3.3.3 Construction Phase

A Construction Traffic Management Plan will be prepared.

A detailed 'Construction Environmental Management Plan' (CEMP) details the allowable working day, construction traffic, parking arrangements and incorporates environmental protection measures.

#### 4.3.3.4 Operational Phase

A Modal Management Plan will be prepared for the proposed development after occupation. The purpose of a mobility management planning is to evaluate the accessibility of a development to the current and future transport infrastructure relative to the site location and to promote initiatives and to support and encourage future occupiers of the proposed development to use sustainable travel modes. The principal objective of a MMP is to reduce levels of private car use by encouraging staff to walk, cycle, use public transport, car share or to reduce the frequency and/or length of trips.

### 4.3.4 Residual Impact Assessment

The results of the capacity assessments show that the existing receiving road network is not under peak hour pressure at present and will satisfactorily accommodate the traffic generation by the proposed development without significant negative impact.

Construction HGV traffic combined with existing port traffic will not exceed the values used in the upper value road network assessments. Given that car traffic and HGV traffic generation during construction will not exceed those values already included in the assessments of operational traffic it is concluded that the impact of construction traffic will not have a significant impact upon the capacity and operation of the receiving road network.

### 4.3.5 Monitoring

In the construction stage the Environmental Clerk of Works will monitor construction vehicle movements in and out of the site to ensure the guidance set out in the CEMP and Traffic Management Plan is being followed. The implementation and performance of traffic management and haul route management measures and initiatives including any ongoing revisions or new initiatives will be monitored and evaluated throughout the Demolition and Construction Phases. The contractor will be required to ensure construction activities operate within the parameters set out in the CEMP and the Construction Traffic Management Plan.



There is no monitoring recommended for the operational phase of the development as impacts due to traffic generation are predicted to be not significant. Operators of the facility will monitor the performance of modal management planning measures.

## **4.4 Material Assets: Built Services**

The assessment of Built Services is contained within Chapter 7 of Volume II. Chapter 7 evaluates aspects of the proposed development relating to the effects of the proposed development on material assets of surface water drainage, foul drainage, water supply and utilities (electricity, telecommunications and gas).

This section should be read in conjunction with the project design drawings and reports including the Engineering Planning Report by CSEA 2024 submitted as part of this application.

### **4.4.1 Existing Environment**

#### **4.4.1.1 Water Supply**

There is an existing 100mm diameter watermain parallel to the southern boundary of the terrestrial port area of the site. There is also a network of pipes at the port office entrance coming from the Greenore Village. Under the proposed marshalling yard there is an existing water main network that is observed to be mostly obsolete considering that the buildings that would have been served are no longer there. Inside application site boundary namely the Terrestrial Site, extending to the Existing Port on Berths 1 & 2, there is a watermain network consisting of 100mm pipe network that feeds the port and quay wall infrastructure.

#### **4.4.1.2 Waste Water Drainage**

There is an existing Victorian brick arch tank structure (Septic Tank) located under the Greenore Port maintenance shed (Store 0). The local Greenore village foul network terminates here. The tank consists of 3no. chambers of 3.5mx4mx2m which approximately equals 84m<sup>3</sup>. An existing 225mm gravity foul line from the Greenore Village discharges into this tank. A 100mm pipe from the Greenore Port offices and a 150mm connection from the former Open Hydro building also discharges locally into the 225mm feed.

An overflow pipe from this existing Septic Tank that previously discharged directly into the Carlingford Lough was decommissioned by UÉ. Currently, this existing Septic Tank is emptied every fortnight as facilitated by LCC. The waste is disposed of at the Dundalk Waste Water Treatment Plant.

#### **4.4.1.3 Surface Water Drainage**

The site is located adjacent to Carlingford Lough and there is no downstream development before out falling to the Irish Sea.

The site survey indicates that the topography of the terrestrial port area and port office entrance area is predominately flat such that drainage is achieved by purpose made low areas where gullies are positioned to intercept the surface water. The survey furthermore indicates the existence of an underground positive surface water drainage system servicing the existing buildings and parking

within the OMF Catchment (ie the Terrestrial Site). It shows gully drainage of existing hard standings and around the existing buildings. The gravity system discharges through a bypass separator before discharging into Carlingford Lough through an existing outfall. The outfall is a 225mm diameter uPVC pipe that discharges through a 225mm diameter flap valve.

The site of the proposed Shore Road Carpark is sloping eastward towards Shore Road and comprises a vacant residential dwelling and garden. A 100mm diameter existing surface water uPVC pipe system was identified along Shore Road adjoining the property. Existing gullies and manholes were also identified. This existing surface water uPVC pipe travels along Shore Road into Greenore Port where it discharges through an outfall northeast of Berth 1.

#### 4.4.1.4 Electrical Supply

ESB has 10 kV and low voltage infrastructure serving existing Greenore Port operations. This is located at the existing Greenore Port offices. A further substation is located at the former Open Hydro building. This substation has a redundant low-voltage room and a transformer which supplies power to the neighbouring Golf Club and a number of properties in Greenore Port Village.

#### 4.4.1.5 Gas Supply

There is no gas supply at the site.

#### 4.4.1.6 Telecommunications

Eir have confirmed presence of existing utilities in the area. The main connection point is located close to the Greenore Port offices. The Greenore Port Offices and former Open Hydro building are serviced by underground ducting.

### 4.4.2 Impact Assessment

#### 4.4.2.1 Do Nothing Scenario

In a 'do nothing' scenario this proposed development will not be constructed. The existing baseline environment may be changed in accordance with the natural development of the port and/or with the extant permissions for Greenore Port as per permitted developments; namely.

- i. Extension and modification of existing Warehouse, **LCC Planning Ref 20268, ABP Ref 307862**
- ii. New Warehouse, **LCC Planning Ref Planning ref 20543, ABP Ref 310184**

In neither application, nor in the natural growth of the Port is any significant modernisation or upgrade of utilities proposed. In respect of this application, the 'do nothing' scenario has no effect on the surrounding utilities infrastructure should no further development take place.

#### 4.4.2.2 Demolition & Construction Phase

##### 4.4.2.2.1 Surface Water Drainage

Without mitigations in place there is potential for the surface water drainage system to become contaminated by site run-off including silts, hydrocarbons & cementitious materials. There is the

potential for compound at the residential site to cause increased demand on the drainage network. Potential exists for road gullies and associated storm networks to become blocked from 'trackout' (dirt & debris carried out of and deposited outside the site). Construction sequencing may also cause ponding.

Surface water networks may be damaged and/or disrupted during works during infrastructure connection/adjustment works.

Without appropriate mitigation, impacts during the construction will be significant and effects short-term and moderate.

#### 4.4.2.2.2 Wastewater Drainage

Without mitigations in place there is potential for improper discharge from construction activities into the foul drainage network from the contractor's compound. Inappropriate demand may be placed on the foul drainage network due to peak demands and inappropriate discharges. Underground services may be damaged by the works or in the process of making or adjusting infrastructure connections.

Without appropriate mitigation, impacts during the construction will be negative and effects temporary and significant.

#### 4.4.2.2.3 Water Supply

It is intended that any water supplies required during construction will be provided from existing water outlets located within the grounds of the Port.

Construction activities will require access to the local water supply network to facilitate connections. These have the potential to disrupt or contaminate local supplies.

Without mitigation, impacts during the construction will be local, negative, temporary and significant.

#### 4.4.2.2.4 Electricity

Construction activities will require temporary connection to existing electrical outlets within the Port for the provision of offices, welfare, lighting etc. There is potential for construction activities to disrupt existing electrical infrastructure through accidental impact or improper works.

Without mitigation measures in place potential impacts from these activities on the electrical supply network will be temporary, negative and significant.

#### 4.4.2.2.5 Telecommunications

Construction phase activities will require access to the local wired Eir telecommunications network to facilitate connections. These works have the potential to disrupt the existing wired telecommunications infrastructure through accidental impact or improper works.

The proposed communications mast will be constructed before the demolition of the existing mast. Potential exists for local infrastructure (CCTV, lighting) belonging to the Port to be disrupted during this work.

Without mitigation measures in place, potential impacts from these activities on the wired telecommunications network will be temporary, negative and significant.

Without mitigation measures in place, potential impacts from these activities on the wireless telecommunications network and Port CCTV will be local to the Port, temporary, negative and insignificant.

#### 4.4.2.3 Operational Phase

The operational phase of the development may be in excess of 60 years and therefore all operational effects are described as permanent unless noted otherwise.

##### 4.4.2.3.1 Surface Water Drainage

During the Operational Phases there will be potential for contamination of the surface water drainage system from hydrocarbons, silt/dust and other chemicals. Surface water discharge rates may exceed the capacity of the existing network.

There will be an increase in surface water volumes from the satellite area draining into the existing surface water network on Shore Road.

The effects without mitigation will therefore be negative and moderate.

##### 4.4.2.3.2 Wastewater Drainage

The proposed development will increase the current discharge to the local foul system but will be less than the previous (OpenHydro) discharge allowance. This increase is catered for by increased servicing of the foul water storage tank located within the Port and maintained by Uisce Éireann. Uisce Éireann have confirmed that wastewater connection to existing infrastructure is feasible without infrastructural upgrade.

The impact significance of the effects is assessed to be negative and slight.

##### 4.4.2.3.3 Water Supply

The proposed development will increase water demand on the water supply network. Uisce Éireann have confirmed that water supply connection is feasible without infrastructural upgrade. The impact significance of the effects is assessed to be negative and not significant.

##### 4.4.2.3.4 Electricity

Without mitigations there exists the possibility of creating excessive energy demand for the local network. This may be due to terrestrial development including the buildings, electric vehicle parking and associated service demands.

Provision is being made for future vessel fuelling technologies including electric power. Such technologies are in development and without mitigation could cause undue pressure on the electrical network.

The impact significance of the effects is assessed to be negative & significant.

##### 4.4.2.3.5 Telecommunications

Wired telecommunications may be disrupted by the additional demands placed on them by the proposed facility.

Communications infrastructure will be mounted on a replacement mast to facilitate communication between future tenants and the offshore windfarms and CTV's. The mast will continue to be used by Greenore Port for CCTV and lighting.

The impact significance of the effects is assessed to be negative and moderate.

#### 4.4.2.4 Cumulative Impact

A list of planning applications in the vicinity of the proposed development is given in Appendix 1.1. Planning applications of lesser scale including small scale residential projects have been considered as having a neutral, imperceptible effect owing to their insignificant demand on material assets. Planning applications outside of Greenore village are considered to have a neutral, imperceptible effect owing to them having no influence on any material assets relevant to this development. All developments are considered to have a permanent effect.

The changes to the stormwater network will have an imperceptible effect on aquaculture. Therefore, an imperceptible, neutral effect on extant or new aquaculture licenses listed in Appendix 1.1. The proposed development has a neutral, imperceptible effect on all other applications listed in Appendix 1.1.

The extant permissions within the Port are not intended to be implemented alongside the proposed development and will therefore have no effect on these developments.

### 4.4.3 Mitigation

#### 4.4.3.1 Incorporated Design

- All new infrastructure will be designed in accordance with relevant standards and Codes of Practice.
- Surface water drainage systems have been designed in accordance with the Louth County Council Development Plan 2021-2027, Greater Dublin Strategic Drainage Study and CIRIA SuDS Manual 2015. This ensures that the surface water discharges are in line with sustainability standards. Specific measures include:
  - The provision of permeable paving
  - Stormwater attenuation tank provision
  - Rainwater harvesting
  - Flow control devices
  - Chemical interceptors
- Fuel and chemical storage areas will be double skinned and/or bunded in accordance with best practice.
- Wastewater networks have been designed in accordance with current regulations and standards. Efficiencies in water usage will be considered throughout the engineering design of the development.
- Buildings will be designed to achieve Technical Guidance Document, Part L, Nearly Zero Energy Building Standards, 2022 compliance which incorporates renewable energy technologies and measures to avoid energy losses. These will have a positive effect on the electrical demand of the proposed development.

- Design phasing ensures the proposed relocation of the substation will be carried out in a phased manner with switchover procedures agreed with ESB. It is expected that any power outages will be planned and coordinated with affected customers (including the Golf club and village residents / business) and will be brief.
- New foul and water connections have received a Confirmation of Feasibility from Uisce Éireann.
- A surface water attenuation system has been designed in the satellite parking area prior to discharge to the existing Shore Road drainage system to mitigate potential peak capacity issues.
- The proposed substation is sized for the future expected capacity demand including EV charging. Additional duct capacity is designed into buried structures for future EV infrastructure.
- Arrangements will be made with the local utility provider to upgrade telecommunications infrastructure if required to meet wired telecommunications demand of the facility.

#### 4.4.3.2 Demolition & Construction Phases

- A site-specific Construction and Environmental Management Plan will be enacted by the Contractor. The plan will put in place good construction practices to reduce the potential for releases to the surface water environment. These include measures to control run-off and the mobilisation of suspended material especially during key activities such as earthworks, dredging & concreting. Good practice vehicle site exiting procedures will be followed including wheel washes as appropriate.
- Pre-construction consultation and authorisation will be achieved for all the relevant infrastructure connections.
- Any works required to material assets on or around the Site will be carried out in conjunction with the relevant provider to ensure minimal disruption to the existing users.
- Any works required to material assets on or around the Site will be carried out strictly in accordance with the relevant provider's Code of Practices.
- Permanent works will require the alteration of existing ESB networks and subject to pre-development authorisation from ESB. The Contractor will be required to put in place measures to the satisfaction of ESB to ensure that these works are carried out safely and in accordance with the appropriate requirements and ESB guidelines.

#### 4.4.3.3 Operational Phase

- There will be an overall reduction in surface water volumes in the Operations & Maintenance Facilities area owing to rainwater harvesting in each of the buildings. Existing drainage systems will be improved through the use of petrol interceptors resulting in a long-term positive effect on the drainage system and existing outfalls.
- Sustainable urban drainage systems features will be maintained appropriately throughout the operational phase of the development by the relevant management body.
- Interceptors & hazardous substance stores will be maintained during the Operational phases of the development by the relevant management body. Potentially harmful chemicals such as



fuels and waste oils will be stored in suitably bunded and/or double skinned tanks in designated areas.

- Nearly zero energy building (NZEB) technologies will be employed to reduce electrical demand from the facility. The following NZEB technologies have been considered for the development; Centralised air to water heat pumps, photovoltaic systems, combined heat and power. Electrical infrastructure within the port will be upgraded as part of this proposed development to cater for increased demand.
- Any future additional power requirements will be agreed with the utility provider.

#### 4.4.4 Residual Impact Assessment

A series of mitigation measures have been prepared to minimise ill effects during demolition and construction phases. Provided these measures are employed, residual impacts are short-term, direct, negative and not significant.

During the Operational Phases of the development infrastructure will continue to be maintained by the appropriate bodies. Provided these items are maintained as designed, residual impacts are long-term, local, negative and not significant.

#### 4.4.5 Monitoring

Appropriate measures to maintain surface water drainage systems and infrastructure shall be put in place such as tank & bund monitoring alarms during the operational phases.

#### 4.4.6 Conclusion

Provided all mitigation measures set out in this chapter are adhered to in full throughout all phases, the overall predicted impact of the proposed development is **long-term, slight** and **negative**.

### 4.5 Material Assets: Waste

The assessment of Waste is contained within Chapter 8 of Volume II. AWN Consulting undertook the waste management assessment. The receiving environment is largely defined by Louth County Council (LCC) as the local authority responsible and the Eastern-Midlands Regional Waste office for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

#### 4.5.1 Existing Environment

The site currently operates as an established port and generates associated waste from operational activities. There are also established buildings that will need to be demolished as part of this application that will generate waste.

## 4.5.2 Impact Assessment

### 4.5.2.1 Do Nothing Scenario

If the proposed development was not to go ahead (i.e. in the Do-Nothing scenario) there would be no demolition, no excavation or construction at this site. There would, therefore, be a neutral effect on the environment in terms of waste generated from construction activities.

As the site is currently operating as a port facility the development is generating waste from operational activities. The existing operation is required to comply with local, regional and national requirements in regard to waste management. If the proposed development was not to take place the site would continue to generate operational waste and the effect on the environment would remain neutral.

The site is zoned for development, and it is likely that in the absence of this subject proposal that a development of a similar nature would be progressed on the site that accords with local, regional and national policies and therefore the likely significant effects would be similar to this proposal.

### 4.5.2.2 Demolition Phase

During the demolition phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative**.

### 4.5.2.3 Construction Phase

During the excavation construction phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative**.

### 4.5.2.4 Operational Phase

The potential impacts on the environment during the operational phase of the proposed development would be caused by improper, or lack of waste management. In the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative**.

### 4.5.2.5 Cumulative Impact

If waste material is not managed and stored correctly and in the absence of mitigation, the effect on the local and regional environment is likely to be **long-term, significant and negative**.

### 4.5.3 Mitigation

#### 4.5.3.1 Incorporated Design

The concept of the 'Waste Hierarchy' and 'Circular Economy' is employed when considering all mitigation measures. 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 circular economy principle aims to keep materials, components, and products in-use in the economy for as long as possible. In circularity, the key objective is to design consumption and production systems to create and retain value. Both principles have been applied and will further be applied during the detailed design, construction and operational phases.

#### 4.5.3.2 Demolition Phase

During the demolition phase, typical demolition waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. While the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the main contractor, who will appoint a construction phase Resource Manager to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

#### 4.5.3.3 Construction Phase

During the construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. While the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the main contractor, who will appoint a construction phase Resource Manager to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

#### 4.5.3.4 Operational Phase

During the operational phase, waste will be generated by the operator and staff. Dedicated waste storage areas (WSAs) have been allocated throughout the development for the use of staff. The WSAs have been appropriately sized to accommodate the estimated waste arisings from the development. The WSAs have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal.

An Operational Waste Management Plan or Strategy will be prepared by the operator prior to occupation which will provide a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including packaging waste, general non-hazardous waste, organic waste including, Dry Mixed Recyclables, Mixed Non-Recyclable Waste, Glass, Waste Oil, Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment, Batteries (non-hazardous and hazardous); Light bulbs; Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.) and Bulky Items/removed as required by a suitably permitted/licenced contractor. This Plan/Strategy will be supplemented, as required, by the operator with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

#### 4.5.4 Residual Impact Assessment

The implementation of mitigation measures outlined in Section 8.9 of the Material Assets – Waste Management Chapter will ensure that targeted rates of reuse, recovery and recycling are achieved at the site of the Proposed Development during the construction and operational phases. It will also ensure that European, National and Regional legislative waste requirements with regard to waste are met and that associated targets for the management of waste are achieved.

##### Demolition Phase

A carefully planned approach to waste management and adherence to the RWMP (which includes mitigation) (Appendix 8.1) during the demolition phase will ensure that the predicted effect on the environment will be **short-term, imperceptible and neutral**.

##### Construction Phase

A carefully planned approach to waste management and adherence to the RWMP (which includes mitigation) (Appendix 8.1) during the construction phase will ensure that the predicted effect on the environment will be **short-term, imperceptible and neutral**.

##### Operational Phase

During the operational phase, a structured approach to waste management will promote resource efficiency and waste minimisation. Provided the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted impact of the operational phase on the environment will be **long-term, imperceptible and neutral**.

#### 4.5.5 Monitoring

The management of waste during the construction phase will be monitored by the Contactor's appointed Resource Manager to ensure compliance with the above-listed mitigation measures, and relevant waste management legislation and local authority requirements, including maintenance of waste documentation.

The management of waste during the operational phase will be monitored by the Operator / Facilities Manager to ensure effective implementation of the mitigation measures outlined in section 8.9 internally and by the nominated waste contractor(s).

#### 4.5.5.1 Demolition Phase

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the demolition works, where there is a potential for waste management objectives to become secondary to other objectives, i.e. progress and meeting schedule targets. The RWMP specifies the need for a Waste Manager to be appointed, who will have responsibility for monitoring the actual waste volumes being generated and ensuring that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Resource Manager will identify the reasons for this and work to resolve any issues. Recording of waste generation during the demolition phase of the proposed Development will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future developments.

#### 4.5.5.2 Construction Phase

The objective of setting targets for waste management is only achieved if the actual waste generation volumes are calculated and compared. This is particularly important during the excavation and construction works, where there is a potential for waste management objectives to become secondary to other objectives, i.e. progress and meeting construction schedule targets. The RWMP specifies the need for a Waste Manager to be appointed, who will have responsibility for monitoring the actual waste volumes being generated and ensuring that contractors and sub-contractors are segregating waste as required. Where targets are not being met, the Resource Manager will identify the reasons for this and work to resolve any issues. Recording of waste generation during the construction phase of the proposed Development will enable better management of waste contractor requirements and identify trends. The data should be maintained to advise on future developments.

#### 4.5.5.3 Operational Phase

During the operational phase, waste generation volumes should be monitored by the Operator / Buildings Management. There may be opportunities to reduce the number of bins and equipment required in the WSAs, where estimates have been too conservative. Reductions in bin and equipment requirements will improve efficiency and reduce waste contractor costs.

### 4.6 Land & Soils

The assessment of Land & Soils is contained within Chapter 9 of Volume II.

#### 4.6.1 Existing Environment

##### 4.6.1.1 Site Location

The proposed development site, Greenore deep-water Port, is strategically located on Ireland's east coast in Co. Louth. It is situated approximately 20km East of Dundalk and serves as the South entrance to Carlingford Lough. The site comprises of an existing greenfield site and the existing Greenore Port Operation and Maintenance Facilities currently in service.

#### 4.6.1.2 Topography

The topography of the site is flat with an average elevation of around 4.1m of the site. A detailed topographic survey by Six West was carried out on January 4<sup>th</sup>, 2023 at Greenore Port area. Based on the topographic survey, the levels typically vary from 4.617mAOD to 4.062mAOD at the proposed development area for the landside quay and office units where the new development will tie into.

#### 4.6.1.3 Soils and Subsoils

According to the EPA and GSI online mapping the principal soil type on-site is Made Ground, which is expected considering the development on the site. This was also confirmed through site investigations carried out on the proposed development site, where the top strata recorded in all borehole logs were Concrete, Made Ground and Hardcore Fill.

The GSI/ Teagasc mapping database of the subsoils in the area of the proposed development site indicates that the material within the land site area is described as Marine sand and gravels raised beach deposits.

#### 4.6.1.4 Geology

Inspection of the available GSI (2023) records (Data Sheet 16 and on-line mapping database) that the site is underlain by Dinantian Limestones (undifferentiated) - Rock Unit Code: CDDIN. This formation is from the Palaeozoic, Carboniferous and Mississippian age bracket.

#### 4.6.1.5 Local Geological Profile

Site investigations carried out on the site confirmed the above, where limestone was encountered. The bedrock was described as moderately strong fine grained Carboniferous Limestone and was encountered at depths from 4.4 mbgl.

For further information on the geological profiles encountered for the Land Development Area and Marine Development Area, during the site investigations carried out on the proposed development site, refer to Chapter 9 – Land and Soils and Appendix 9.3 - Greenore Port – Geotechnical Interpretive Report (Gavin & Doherty Geosolutions, 2023).

### 4.6.2 Impact Assessment

#### 4.6.2.1 Do Nothing Scenario

If the proposed development at Greenore Port was not to go ahead (i.e. in a Do-Nothing scenario) the baseline environment in terms of land, soils, and geology would remain unchanged as there would be no excavations or construction. Therefore, in a “Do Nothing” scenario, there would be a neutral effect on the land, soils, and geological environment at the site. The likelihood in a temporary and short-term basis is the existing natural state of the area would persist, without any alterations or disturbances caused by the development.

However, there are a number of existing permitted developments at the site and Greenore Port area. It should be noted that in the event that the proposed development does not go ahead, the extant permissions for Greenore Port can still go ahead. It is likely that in the absence of the proposed development that a development of a similar nature would be progressed on the site that accords



with national and regional policies and therefore the likely significant effects would be similar to this proposal.

#### 4.6.2.2 Demolition Phase

To facilitate the development, demolition works are required. This will include the demolition of the former 'Open Hydro building' to, and a small portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house. The demolition works of the proposed development are limited to surface-level activities and do not involve any excavation works. As a result, the impact on the land and soils is minimal.

The demolition process focuses on dismantling and removing structures, buildings and infrastructure (i.e. Open Hydro building, office accommodation, ESB substation and associated switch room, unoccupied dwelling house etc.) to accommodate the new development and facilitation works, without disturbing the underlying soil or altering the landscape. This approach ensures that there are no significant effects on the land's composition, stability, or fertility. The absence of excavation works means that there is no disturbance to the natural soil structure, preventing potential soil erosion or compaction.

In addition, all waste materials will be dealt with in accordance with regional and national legislation, time and resources will be dedicated to ensuring efficient waste management practices and waste arisings will be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate.

Refer to Chapter 8 – Material Assets – Waste – Section 8.9.2 of the EIAR for further information on predicted on demolition phase mitigation in terms of off-site reuse, recycle and disposal rates for demolition waste.

Overall, minimal mitigation measures are required during the demolition phase due to the surface level nature of the works. The surface-level demolition works will have a negligible impact on the land and soils, preserving their integrity and minimizing any potential environmental consequences.

#### 4.6.2.3 Construction Phase

In absence of mitigation measures, the construction phase would present potential impacts associated with the following activities:

- Excavation and Infilling; and
- Accidental Spills, Discharges, and Leaks.

In the absence of mitigation measures the potential impacts during the construction phase on land, soils and geology are likely to be **short-term, significant and negative**.

#### 4.6.2.4 Operational Phase

In absence of mitigation methods, the operational phase would present potential impacts associated with the following activities:

- Accidental Leaks / Unmitigated spills.

In the absence of mitigation, measures the potential effects during the operational phase on land and soils are **long-term, significant and negative**.

#### 4.6.2.5 Cumulative Impact

There are existing residential and commercial developments close by, along with multiple permissions remaining in place in the area. Multiple developments in the area could potentially be developed concurrently or overlap during the demolition, construction and operational phases. There will be no effects on land soils and geology as each development will adhere to their own CEMP and mitigation plan. There is no pathway and connectivity to land soils and geology to each development.

##### 4.6.2.5.1 Construction Phase

All developments will have to incorporate measures to protect soil and water quality in compliance with legislative standards for receiving water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019). As a result, there will be minimal cumulative potential for change in the natural geological regime. The cumulative impact is considered to be **short-term, neutral** and **imperceptible**.

##### 4.6.2.5.2 Operational Phase

All developments are required to manage discharges in accordance with S.I. 272 of 2009 and S.I. 77 of 2019 amendments. As such, there will be no cumulative impact to land, soils, and geology. The operation of the proposed development is concluded to have a **long-term, imperceptible significance** with a **neutral** impact on land, soils and geology in combination with other developments in the surrounding area.

### 4.6.3 Mitigation

#### 4.6.3.1 Incorporated Design

This section outlines the measures that will be employed in order to ensure the project has minimal adverse effects on the surrounding environment, in this case land, soils and geology. These measures include appropriate design measures such as the proper storage and containment of hazardous substances and proper drainage systems in line with best practice, standard details, policies and guidelines already incorporated into the proposed design. For further information on design refer to the Engineering Planning Report (CSEA, 2023) submitted with this application.

#### 4.6.3.2 Demolition Phase

To facilitate the development, demolition works are required. This will include the demolition of the former 'Open Hydro building' to, and a small portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house. The demolition works of the proposed development are limited to surface-level activities and do not involve any excavation works. As a result, the impact on the land and soils is minimal.

The demolition process focuses on dismantling and removing structures, buildings, and infrastructure (i.e. Open Hydro building, office accommodation, ESB substation and associated switch room, unoccupied dwelling house etc.) to accommodate the new development and facilitation works,

without disturbing the underlying soil or altering the landscape. This approach ensures that there are no significant effects on the land's composition, stability, or fertility. The absence of excavation works means that there is no disturbance to the natural soil structure, preventing potential soil erosion or compaction.

In addition, all waste materials will be dealt with in accordance with regional and national legislation, time and resources will be dedicated to ensuring efficient waste management practices and waste arisings will be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate.

Refer to Chapter 8 – Material Assets – Waste – Section 8.9.2 of the EIA for further information on predicted on demolition phase mitigation in terms of off-site reuse, recycle and disposal rates for demolition waste.

Overall, minimal mitigation measures are required during the demolition phase due to the surface level nature of the works. The surface-level demolition works will have a negligible impact on the land and soils, preserving their integrity and minimizing any potential environmental consequences.

#### 4.6.3.3 Construction Phase

In order to reduce impacts on the land, soils and geological environment, a number of mitigation measures will be adopted as part of the construction works on site. The measures will address the main activities of potential impact which include:

- Control of soil excavation and export from site;
- Sources of fill and aggregates for the proposed development;
- Fuel and chemical handling, transport and storage; and
- Control of water during construction.

An Outline Construction Environmental Management Plan (OCEMP) is included with the application documentation. The main purpose of an OCEMP is to provide a mechanism for implementation of the various mitigation and monitoring measures which are described in the EIAR. The OCEMP demonstrates the applicant's commitment to implementing the proposed development in such a way as to avoid or minimise the potential environmental effects arising from construction activities. All personnel will be required to understand and implement the requirements of the plan.

#### 4.6.3.4 Operational Phase

In order to reduce impacts on the land, soils and geological environment, a number of mitigation measures will be adopted throughout the operational phase of the proposed development. The measures will address the main activities of potential impact which include the following. The mitigation measures discussed in Sections 9.9.4 and 10.9.4 of the EIA are both applicable.

##### 4.6.3.4.1 Increased Run-Off and Sediment Loading

The proposed development will not add any new hardstanding areas within the port. Therefore, there will be no requirements for mitigations against increased run-off and sediment loading post construction phase of the development.

#### 4.6.3.4.2 Drainage

There are no direct or indirect foul water discharges to ground or Carlingford Lough as part of the existing or proposed waste water drainage design.

The port has an existing foul drainage network in place comprising a foul collection tank and foul lines servicing buildings in the port. This includes an existing 150mm connection to the foul collection tank from the former Open Hydro building.

A new network of foul sewers will be installed to serve the proposed development, discharging to the existing collection tank. Therefore, as there are no effects on the land, soils and geology at the proposed development, no mitigation is required.

There are two separate surface water drainage proposals for the proposed development, one for the O&M facility development at the terrestrial port area and a separate system for the satellite carpark at the residential site on Shore Road.

There is no discharge to ground proposed as part of the surface water drainage strategy from the O&M Facility and the existing outfall into Carlingford Lough will be utilised. Therefore, as there are no effects on the land, soils and geology at the proposed development, no mitigation is required.

There is no discharge to ground proposed as part of the surface water drainage strategy from the shore road car park. Surface water will discharge to the public surface water pipe on Shore Road. A bypass interceptor will be installed to capture pollutants such as petroleum and oil and prevent their entry to the public drainage system. Therefore, as there are no effects on the land, soils and geology at the proposed development, no mitigation is required.

#### 4.6.3.4.3 Storage of Hazardous Material

A fuel storage facility with a capacity of  $\geq 200,000$  liters will be provided in a dedicated area that will be maintained and managed by Greenore Port. This quantity of proposed fuel storage is significantly below the applicable threshold of 2,500 tonnes for petroleum products and alternative fuels detailed in Part 2 of Schedule 1 of the Control of Major Accident Hazards (COMAH) Regulations 2015.

In addition to this the tanks will be bunded or double skinned so in the event of a spill no discharge to ground will occur.

As part of integrated design mitigation, Surface water will be drained from this area into the proposed network with petrol interceptors included to ensure no hydrocarbon contamination exits the site through the surface water drainage system. Hence, no mitigation will be required during the operational phase.

### 4.6.4 Residual Impact Assessment

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the demolition, construction and operational phases of the proposed development. Due to the inter-relationship between land, soils, geology, hydrogeology and surface water the following impacts discussed will be considered applicable to both Chapter 9 (Land and Soils) & Chapter 10 (Hydrology) of the EIAR.

#### 4.6.4.1 Demolition Phase

A carefully planned approach during the demolition phase in particular waste management, and full adherence to the RWMP, will ensure that the predicted effect on the land, soils and geological environment will be **short-term, imperceptible** and **neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

#### 4.6.4.2 Construction Phase

##### 4.6.4.2.1 Soil Excavation, Removal and Infill

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the construction phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

##### 4.6.4.2.2 Sources of Engineering Fill and Aggregate

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the construction phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

##### 4.6.4.2.3 Fuel and Chemical Handling

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the construction phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

#### 4.6.4.3 Operational Phase

##### 4.6.4.3.1 Increased Run-Off and Sediment Loading

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the operational phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

##### 4.6.4.3.2 Waste Water Drainage

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the operational phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

#### 4.6.4.3.3 Surface Water Drainage

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the operational phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

#### 4.6.4.3.4 Storage of Hazardous Material

The implementation of mitigation measures will ensure that the potential impacts on the land, soils and geological environment do not occur during the operational phase and that the residual effect will be **short-term-imperceptible-neutral**. Following the TII criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

### 4.6.5 Monitoring

#### 4.6.5.1 Demolition Phase

The demolition works of the proposed development are limited to surface-level activities and do not involve any excavation works. The absence of excavation works means that there is no disturbance to the natural soil structure, preventing potential soil erosion or compaction.

In addition, all waste materials will be dealt with in accordance with regional and national legislation, time and resources will be dedicated to ensuring efficient waste management practices and waste arisings will be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate.

Therefore, no monitoring is required.

#### 4.6.5.2 Construction Phase

During construction phase the following monitoring measures will be implemented:

- Regular inspection of surface water run-off and sediments controls (e.g., silt traps);
- Soil sampling to confirm disposal options for excavated soils in order to avoid contaminated run-off.
- Excavation works to be monitored to record any signs of potentially contaminated soil;
- Regular inspection of construction / mitigation measures outlined in the CEMP should be adhered to during the construction phase. (e.g., concrete pouring, refuelling, etc); and
- Soil sampling of excavated soils and monitoring of surface water run-off will be required in case of accidental discharges to underlying geology.

#### 4.6.5.3 Operational Phase

Maintenance of the surface water drainage system, including separators / interceptors, and foul sewers is recommended to minimise any accidental discharges to soil or groundwater.

Monitoring of surface water run-off will be required in case of accidental discharges to underlying geology.



## 4.7 Water & Hydrology

The assessment of Water & Hydrology is contained within Chapter 10 of Volume II.

### 4.7.1 Existing Environment

#### 4.7.1.1 Site Location

The proposed development site, Greenore deep-water Port, is strategically located on Ireland's east coast in Co. Louth. It is situated approximately 20km East of Dundalk and serves as the South entrance to Carlingford Lough. The port features a single quay facing North-West, protected by a detached breakwater made of a rubble mound rock structure with wooden piles. The exact depth of these piles is currently unknown. The main berthing pocket offers 260m of quayside berthage, with varying water depths at high water (HW) and low water (LW). The port has a water depth of 9.1m at high water and 4.9m at low water. It can accommodate vessels up to 60,000DWT and has Liebherr port cranes capable of lifting up to 124T. The port handles both container and bulk traffic and offers marine and logistical support services.

The proposed development site lies within the Newry, Fane, Glyde and Dee Catchment 06 and Big [Louth]\_SC\_10 WFD sub-catchment 06-9 (Greenore\_010 WFD River Sub Basin). According to the EPA river network (EPA maps, <https://gis.epa.ie/EPAMaps/> accessed on 12-10-2023), the nearest surface water receptor is the Carlingford Lough coastal waterbody (WFD code: GBNII6NB030) which is a transboundary waterbody located adjacent to the proposed development site

#### 4.7.1.2 Surface Water Quality

The Environmental Protection Agency (EPA, 2023) on-line mapping presents the available water quality status information for water bodies in Ireland. The most recent WFD Status score (2016-2021) states that the Carlingford Lough coastal waterbody has an 'Unassigned' status while its WFD risk score is 'Under Review' (refer to [www.catchments.ie](http://www.catchments.ie)).

Nevertheless, the Northern Ireland Environment Agency (NIEA) Catchment Data Viewer also presents the water quality status for water bodies in Northern Ireland. As such, the Carlingford Lough coastal waterbody has a 'Moderate' status for the period 2016-2021.

#### 4.7.1.3 Surface Water Drainage

The port currently has an existing stormwater drainage network in place. This serves as a drainage network for both yard surface water and roof water from buildings. A site survey conducted (Refer to Appendix 10.5 – Section 3.5) shows gullies alongside the road and around buildings. The gravity system discharges through a bypass separator before discharging into Carlingford Lough coastal waterbody through one existing outfall. The outfall (Outfall 1) is a 225mm diameter uPVC pipe that discharges through a 225mm diameter tide lock. it should be noted that this system includes hydrocarbon interceptors prior to discharge into the waterbody.

#### 4.7.1.4 Wastewater

The port currently has an existing foul drainage network in place comprising of a foul septic tank and foul lines servicing buildings in the port. The foul collection tank is located under the floor of an existing

warehouse north of the port office and collects foul effluent from the Port and the village. The collection tank is a Uisce Éireann asset and is emptied with a tanker periodically and sent to Dundalk Wastewater Treatment Plant (WWTP).

#### 4.7.1.5 Water Supply

There is an existing 100mm diameter watermain parallel to the southern boundary of the Main Greenore OMF. There is also a significant watermain network within the Port serving the existing infrastructure and quayside operations.

#### 4.7.1.6 Flood Risk

A Site-Specific Flood Risk Assessment (SSFRA) has been carried out by McCarthy Browne and accompanies this planning application under separate cover. This SSFRA confirms the location of the proposed development is predominantly within Flood Zone C (i.e., where the probability of flooding from rivers and coastal is less than 0.1% or 1 in 1000 years – probability of fluvial flooding is low risk).

The final design for Buildings A, B and C has a finished floor level of no lower than 5.05m OD which is a safe freeboard above the water level estimated for Flood Zone C. Therefore, any flood events will not cause flooding of the proposed buildings.

The site does not act as a flood storage zone and the proposed development will not add any new hardstanding areas within the port. The Shore Road carpark area will be constructed with permeable paving. On this basis, it can be stated that the development will not affect the flood storage volume or increase flood risk elsewhere.

#### 4.7.1.7 Areas of Conservation

The proposed development site is partially within Carlingford Shore SAC (Site code: 002306) and Carlingford Lough SPA (Site code: 004078). Currently there is a direct hydrological linkage between the proposed development and these sites through the existing stormwater drainage network which outfalls into the Carlingford Lough.

The Carlingford Lough receives water from the Newry catchment, which is a transboundary catchment, and more specifically from the Newry Estuary transitional waterbody (WFD Code: UKGBN15NB030010).

#### 4.7.1.8 Rating of Site Importance of the Hydrological Features

Based on the NRA (2009) methodology (refer to Appendix 10.1) and criteria for rating the importance of hydrological features, the importance of the hydrological features at this site is rated as 'Extremely High' Importance.

This is based on the assessment that the attribute has a high quality, or value on an international scale. The site directly connected with a surface water body ecosystem protected by EU legislation (Carlingford Lough SPA/ Carlingford Shore SAC).

#### 4.7.1.9 Hydrogeology

##### 4.7.1.9.1 Aquifer Classification

Presently, from the GSI (2023) National Bedrock Aquifer Map, the GSI classifies the bedrock aquifer beneath the subject site as a Locally Important Aquifer (Lm). The potential for vertical or horizontal migration within this type of aquifer could be significant in the presence of regional scale fractures. The GSI map does not identify structural faults underneath the area of the subject site.

##### 4.7.1.9.2 Groundwater Vulnerability

The GSI (2023) guidance presently classifies the bedrock aquifer in the region of the subject site as having 'High' vulnerability which indicates a general overburden depth potential between 3-5m, suggesting a moderate to good natural protection of the aquifer by high permeability marine gravel and sands. This is consistent with local site investigations, as carboniferous limestones have been encountered at depths from 4.4 m below ground level.

##### 4.7.1.9.3 Local Hydrogeological Profile

For information on the hydrogeological and hydrological environment encountered for the Land Development Area and Marine Development Area, during the site investigations carried out on the proposed development site, refer to Chapter 9 – Land and Soils, and Appendix 9.3 - Greenore Port – Geotechnical Interpretive Report (Gavin & Doherty Geosolutions, 2023) and Appendix 9.5 - BRE 365 and Plate Bearing Report (BHP, 2024).

### 4.7.2 Impact Assessment

#### 4.7.2.1 Do Nothing

If the proposed development at Greenore Port was not to go ahead (i.e. in a Do-Nothing scenario) the baseline environment in terms of hydrogeology and hydrology would remain unchanged as there would be no excavations or construction. Therefore, in a "Do Nothing" scenario, there would be a neutral effect on the hydrogeological and hydrological environment at the site. The likelihood in a temporary and short-term basis is the existing natural state of the area would persist, without any alterations or disturbances caused by the development.

However there are a number existing permitted developments at the site and Greenore Port area. It should be noted that in the event that the proposed development does not go ahead, the extant permissions for Greenore Port can still go ahead. It is likely that in the absence of the proposed development that a development of a similar nature would be progressed on the site that accords with national and regional policies and therefore the likely significant effects would be similar to this proposal.

#### 4.7.2.2 Demolition Phase

The development project requires demolition works, including the demolition of the former 'Open Hydro building', a portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house. However, the potential impacts on the hydrogeological and hydrological environment surrounding the development are expected to be minimal due to the demolition works being limited to surface-level activities and do not involve any excavation works. As a result, there will be minimal

impact on the hydrogeological and hydrological environment, and no significant effects on the composition, stability, or fertility of the land are anticipated. The absence of excavation works also means that there will be no disturbance to the natural soil structure, thus preventing potential soil erosion or compaction and increased run-off rates.

For more detailed information on the predicted reuse, recycle, and disposal rates for demolition waste, please refer to Chapter 8 - Material Assets - Waste of this EIAR.

Overall, the surface-level demolition works will have a negligible impact on the hydrogeological and hydrological environment, preserving their integrity and minimizing any potential environmental consequences. In the absence of mitigation, the effect on land, soils and geology is likely to be **short-term, not significant and negative**.

#### 4.7.2.3 Construction Phase

In absence of mitigation measures, the construction phase would present potential impacts associated with the following activities:

- Suspended solids (muddy water with increased turbidity (measure of the degree to which the water loses its transparency due to the presence of suspended particulates) – arising from dewatering, excavation and ground disturbance;
- Hydrocarbons and other construction chemicals (ecotoxic) – accidental spillages from construction plant or stored fuels, oils, and materials; and
- Wastewater (nutrient and microbial rich) – arising from accidental discharge from on-site toilets and washrooms.

In the absence of mitigation measures the potential impacts during the construction phase on hydrogeology and hydrology are **negative, significant** and **short-term**.

#### 4.7.2.4 Operational Phase

In absence of mitigation methods, the operational phase would present potential impacts associated to the following activities:

- Accidental Leaks / Unmitigated spills.

In the absence of mitigation measures the potential impacts during the operational phase on hydrogeology and hydrology are **negative, imperceptible**, and **long-term**.

#### 4.7.2.5 Cumulative Impact

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. Multiple developments in the area could potentially be developed concurrently or overlap during the demolition, construction and operational phases. There will be no effects on hydrogeology and hydrology as each development will adhere to their own CEMP and mitigation plan.

##### 4.7.2.5.1 Construction Phase

All developments will have to incorporate measures to protect soil and water quality in compliance with legislative standards for receiving water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019). As a result, there will be

minimal cumulative potential for change in the natural hydrogeological and hydrological regime. The cumulative impact is considered to be **short-term, neutral** and **imperceptible**.

#### 4.7.2.5.2 Operational Phase

All developments are required to manage discharges in accordance with S.I. 272 of 2009 and S.I. 77 of 2019 amendments. As such, there will be no cumulative impact to groundwater or surface water quality and, therefore, there will be no cumulative impact on the groundwater (Dundalk GWB) and surface waterbody body status (Carlingford Lough). The operation of the proposed development is concluded to have a **long-term, imperceptible** significance with a **neutral** impact on hydrogeology and hydrology in combination with other developments in the surrounding area.

### 4.7.3 Mitigation

#### 4.7.3.1 Incorporated Design

This section outlines the measures that will be employed in order to ensure the project has minimal adverse effects on the surrounding environment, in this case hydrogeology and hydrology. These measures include appropriate design measures such as the proper storage and containment of hazardous substances and proper drainage systems in line with best practice, standard details, policies and guidelines. For further information on design refer to the Engineering Planning Report – Greenore Port OMF (CSEA, 2023) submitted with this application.

#### 4.7.3.2 Demolition Phase

To facilitate the development, demolition works are required. This will include the demolition of the former 'Open Hydro building' to, and a small portion of the port's office accommodation, an ESB substation, and an unoccupied dwelling house. The demolition works of the proposed development are limited to surface-level activities and do not involve any excavation works. As a result, the impact on hydrogeology and hydrology is minimal.

The demolition process focuses on dismantling and removing structures, buildings and infrastructure (i.e. Open Hydro building, office accommodation, ESB substation and associated switch room, unoccupied dwelling house etc.) to accommodate the new development and facilitation works, without disturbing the underlying soil or altering the landscape. This approach ensures that there are no significant effects on the underlying aquifer (Dundalk GWB) and Carlingford Lough due to increased run-off, soil compaction related to excavation works.

Refer to Chapter 8 – Material Assets – Waste – Section 8.9.2 of the EIA for further information on predicted on demolition phase mitigation in terms of off-site reuse, recycle and disposal rates for demolition waste. These measures will ensure no discharge of contaminated run-off enter the surrounding hydrogeological and hydrological environment.

Overall, no mitigation measures are required during the demolition phase in relation to hydrogeology and hydrology due to the surface level nature of the works. The surface-level demolition works will have a negligible impact on hydrogeology and hydrology, preserving their integrity and minimizing any potential environmental consequences.

#### 4.7.3.3 Construction Phase

In order to reduce impacts on the land, soils and geological environment, a number of mitigation measures will be adopted as part of the construction works on site. The measures will address the main activities of potential impact which include:

- Control of soil excavation and export from site;
- Sources of fill and aggregates for the proposed development;
- Fuel and chemical handling, transport and storage; and
- Control of water during construction.

An Outline Construction Environmental Management Plan (CEMP) was prepared and is included with the application documentation. The main purpose of a CEMP is to provide a mechanism for implementation of the various mitigation and monitoring measures which are described in the EIAR. The CEMP demonstrates the applicant's commitment to implementing the proposed development in such a way as to avoid or minimise the potential environmental effects arising from construction activities. All personnel will be required to understand and implement the requirements of the plan.

#### 4.7.3.4 Operational Phase

The design has taken account of the potential effects of the development on surface water quality and measures have been incorporated in the design to mitigate these potential effects. The proposed surface water drainage strategy is designed in accordance with the Greater Dublin Strategic Drainage Study (GSDSDS), Water Services Guidelines for Planning Authorities (Draft – 2018) and The SuDS Manual (CIRIA, 2015). The proposed surface water drainage system designed for this development includes a number of Sustainable Urban Drainage Systems (SuDS) measures incorporated to reduce run-off volumes and improve run-off water quality such as permeable paving/grasscrete, filter drains, underground arch-type attenuation storage and an underground stone-fill reservoir attenuation system. The design of the attenuation storage system has been carried out for the 1 in 100-year event with a 20% allowance for climate change.

There is no discharge to ground proposed as part of the surface water drainage strategy from the O&M Facility and the existing outfall into Carlingford Lough will be utilised. Therefore, as there are no effects on the hydrogeology and hydrology at the proposed development, no mitigation is required.

There is no discharge to ground proposed as part of the surface water drainage strategy from the shore road car park. Surface water will discharge to the public surface water pipe on Shore Road. A bypass interceptor will be installed to capture pollutants such as petroleum and oil and prevent their entry to the public drainage system. Therefore, as there are no effects on the hydrogeology and hydrology at the proposed development, no mitigation is required.

The port has an existing foul drainage network in place comprising a foul collection tank and foul lines servicing buildings in the port. This includes an existing 150mm connection to the foul collection tank from the former Open Hydro building.

A new network of foul sewers will be installed to serve the proposed development, discharging to existing connections to the existing collection tank. Therefore, as there are no effects on the hydrogeology and hydrogeology at the proposed development, no mitigation is required.



AWN Consulting have prepared a Water Framework Directive (WFD) Screening Assessment that is included with the application documentation (Appendix 10.4 of the EIAR). The WFD Screening Report includes robust mitigation measures to protect the hydrological environment (Carlingford Lough) and underlying hydrogeological environment (Dundalk GWB).

The design mitigation measures have taken account of the potential impacts of the development on surface water quality; measures have been incorporated in the design to mitigate these potential impacts.

A fuel store with a capacity of  $\geq 200,000$  liters will be provided in a dedicated area that will be maintained and managed by Greenore Port. The overall volume will be stored in 1-2 bunded tanks and located in a secure area of the site to avoid accidental impact. The tanks will be fitted with overfill prevention, bund alarm and automatic shut off valves to mitigate risk of spills. Surface water will be drained from this area into the proposed network with petrol interceptors included.

#### 4.7.4 Residual Impact Assessment

This section assesses potential significant environmental impacts which remain after mitigation measures are implemented.

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. Multiple developments in the area could potentially be developed concurrently or overlap during the demolition, construction and operational phases.

##### 4.7.4.1 Demolition Phase

The potential impacts on the hydrogeological and hydrological environment surrounding the development are expected to be minimal due to the demolition works being limited to surface-level activities and do not involve any excavation works. As a result, there will be minimal impact on the hydrogeological and hydrological environment, and no significant effects on the composition, stability, or fertility of the land are anticipated. The absence of excavation works also means that there will be no disturbance to the natural soil structure, thus preventing potential soil erosion or compaction and increased run-off rates.

Overall, the surface-level demolition works will have a negligible impact on the hydrogeological and hydrological environment, preserving their integrity and minimizing any potential environmental consequences.

The implementation of mitigation measures will ensure the residual effect on the hydrogeological and hydrological environment during the demolition phase is likely to be **short-term, not significant and negative**.

##### 4.7.4.2 Construction Phase

###### 4.7.4.2.1 Surface Water Quality

The implementation of the mitigation and monitoring measures will ensure that the potential impacts on the hydrogeological and hydrological environment during the construction phase are adequately

mitigated. The residual effect on surface water quality during the construction phase is considered to be **neutral, imperceptible** and **short-term**.

#### 4.7.4.2.2 Human Health and Populations

The implementation of the mitigation and monitoring measures will ensure that the potential impacts on human health and populations (and material assets) during the construction phase are adequately mitigated. The residual effect on human health and populations during the construction phase is considered to be **neutral, imperceptible** and **short-term**.

#### 4.7.4.2.3 Water Framework Directive Status

Even in the absence of the mitigation and monitoring measures there will be no predicted degradation of the current water body (chemically, ecological and quantity) or any impact on its potential to meet the requirements and/or objectives in the second RBMP 2018-2021 (River Basin Management Plan) and draft third RBMP 2022-2027.

There are appropriately designed mitigation measures which will be implemented during the construction phase to protect the hydrological environment. There is a potential of accidental discharges during the construction phase, however these are temporary short-lived events that will not impact on the water status of waterbodies long-term and as such will not impact on trends in water quality and over all status assessment.

The residual effect on Water Framework Directive Status during the construction phase is considered to be **neutral, imperceptible** and **short-term**.

#### 4.7.4.3 Operational Phase

##### 4.7.4.3.1 Surface Water Quality

The implementation of the mitigation measures will ensure that the potential impacts on surface water quality once the proposed development is constructed and operational are adequately mitigated. The residual effect on surface water quality during the operational phase is considered to be **neutral, imperceptible** and **long-term**.

There will be no impact to the quality of designated sites associated with Carlingford Lough (Carlingford Shore SAC/ Carlingford Lough SPA) due to the hydrological volume and dilution of Carlingford Lough and the mitigation measures cited. In addition, overall, the SuDS, attenuation proposed will improve flood management and water quality exiting the site.

##### 4.7.4.3.2 Human Health and Populations

The implementation of the mitigation measures will ensure that the potential impacts on human health and populations (and material assets) once the proposed development is constructed and operational are adequately mitigated. The residual effect on human health and populations during the operational phase is considered to be **neutral, imperceptible** and **long-term**.

##### 4.7.4.3.3 Water Framework Assessment

Even in the absence of the mitigation measures there will be no predicted degradation of the current water body (chemically, ecological and quantity) or any impact on its potential to meet the

requirements and/or objectives in the second RBMP 2018-2021 (River Basin Management Plan) and draft third RBMP 2022-2027.

There are appropriately designed mitigation measures which will be implemented during the operational phase to protect the hydrogeological and hydrological environment. There is a potential of accidental discharges during the operational phase, however these are temporary short-lived events that will not impact on the water status of waterbodies long-term and as such will not impact on trends in water quality and over all status assessment.

There are no untreated discharges of wastewater during the operational phase to any open waterbody / watercourse. All surface water discharges will be adequately treated via SuDS measures, hydro-brake (or equivalent) and oil/water interceptor / separator to ensure there is no long-term negative impact to the WFD water quality status of the receiving water body. The SuDS and proposed measures have been designed in detail with the ultimate aim of protecting the hydrological (& hydrogeological) environment. The SuDS and project design measures will be maintained correctly as per specifications to ensure long-term / on-going integrity of same.

#### **4.7.5 Monitoring**

##### **4.7.5.1 Demolition Phase**

The demolition works of the proposed development are limited to surface-level activities and do not involve any excavation works. The absence of excavation works means that there is no disturbance to the natural soil structure, preventing potential soil erosion or compaction.

In addition, all waste materials will be dealt with in accordance with regional and national legislation, time and resources will be dedicated to ensuring efficient waste management practices and waste arisings will be taken to suitably registered / permitted / licenced waste facilities for processing and segregation, reuse, recycling, recovery, and / or disposal, as appropriate. Hence, eliminating the risk of contaminated runoff to surface or groundwater.

##### **4.7.5.2 Construction Phase**

During the construction phase the following monitoring measures will be considered:

- Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items, and that all storage is located at least 20 m from surface water receptors.
- Regular inspection of surface water run-off and sediments controls will be implemented throughout the construction phase and full adherence to the Outline Construction Environmental Plan will be maintained.
- Runoff diversion channels/bunds need regular maintenance to keep functioning throughout their life.
- Soil sampling to confirm disposal options for excavated soils in order to avoid contaminated run-off; and
- Regular inspection of construction / mitigation measures (e.g., concrete pouring, refuelling, etc).
- Monitoring will be adopted to ensure that the water is of sufficient quality to discharge to the stormwater network.

## 4.8 Biodiversity

The assessment of Biodiversity is contained within Chapter 11 of Volume II.

### 4.8.1 Existing Environment

#### 4.8.1.1 Terrestrial Habitats and Flora

The site includes a narrow coastal strip featuring a recently constructed quay wall, several older concrete caissons, and a pitched sea wall composed of cut limestone cobbles. Various plant species have been observed in small clusters or as individual specimens within and along the periphery of the caisson area.

The Groyne/Breakwater at Greenore Port marks the northern edge of the development area and was constructed as a rubble mound rock structure, with wooden piles running along its length. The breakwater is used by waterbirds for roosting and loafing, primarily large gulls and cormorants.

Buildings and artificial surfaces within the site represent a highly modified habitat type characterised by the dominance of artificial materials with negligible ecological value. These consist of a functional port area, remnants of a wall associated with the pre-existing railway, a port warehouse (formerly occupied by Open Hydro), a portion of the Greenore Port office, a car park, and segments of public/private realm, together with the existing residential dwelling and driveway.

Amenity grassland is a modified grassland habitat considered of lower local importance, present at the residential site at the east of the development area. The area is flat with an overgrown garden featuring a lawn and several exotic shrubs.

Ornamental flower beds and a few sycamores are present at the existing port office entrance.

The site contains a section of a free-standing brick and limestone wall associated with the former Engine Shed of the Greenore railway station.

#### 4.8.1.2 Terrestrial mammals

No bats were noted emerging from structures. Two common pipistrelle bats were observed in 2023 at the residential site and an individual Soprano Pipistrelle was recorded foraging within a large metal storage building to the north of the site outline within the port area in 2024.

No bats were noted transiting through or foraging within the port area inside the proposed site. The site is of relatively low importance to the local bat population. The site is currently well-lit from the existing floodlights within the subject site, and from light spill of the adjacent residential area street lighting.

Otter spraints were not recorded at the site or within the wider port landholding. Otter spraints were recorded along the sea wall of the adjacent golf course, at Hammils Quay (a slip adjacent to the old railway line) and in other places along the shore and within the golf course. Several otter tracks and a possible slide were found on an island in one of the ponds on the Greenore Golf Course.

Overall, the intertidal bay between Carlingford and Greenore provides quality otter foraging habitats with an abundance of crabs, crayfish, and fish available. The widespread otter spraints suggest

extensive use of the golf course streams and ponds, the shore, and the intertidal area by otters. Wetlands in the hinterland may serve as holt habitats.

No signs of badger were observed during the otter survey. Generally, the area around the port and the golf course are unsuitable for badger due to the high water table.

Signs of other fauna, including red fox, badger, and pine martin, were also surveyed but no trace was found. No amphibians or reptiles were noted on site, and smooth newts and viviparous lizards are considered highly unlikely in the area.

#### 4.8.1.3 Marine Mammals

Carlingford Lough and adjacent waters are important for marine mammals. Seals, especially harbour (common) seals, occur in good numbers throughout the year and grey seals in much smaller numbers. Harbour porpoises are frequent in the north Irish Sea to the east of Carlingford Lough, and common and bottlenose dolphins also occur occasionally, as do minke whales seasonally.

#### 4.8.1.4 Avifauna

The general port area hosts a highly variable number of waterbirds including the Black Guillemot and various gulls such as great black backed gulls and herring gulls, with a smaller number of common and black-headed gulls.

The breeding bird survey confirmed a pair of wagtails, a pair of rock pipits, a single pair of jackdaws and Black guillemots. At least 22 pairs of swift nests in the eaves of the terrace along Euston Street were recorded, along with four pairs of house martins.

Approximately 1,250 pairs of rooks and 30 pairs of jackdaws nest in tall pines at the Greenore Golf Course adjoining the subject site. Several pairs of cormorants regularly nest on Haulbowline lighthouse, 3.7 km from the development site.

Overall, the terrestrial breeding bird population is typical for the existing port related habitat. No rare or especially protected passerines were found.

#### 4.8.1.5 Benthic Ecology

The inner reaches of Carlingford Lough are dominated by soft stable infralittoral mud. This area is bisected by a narrow section of the central scour channel characterised by Sublittoral sands and muddy sand, also found throughout the shallower areas of the lough.

The remainder of the lough is characterised by a mosaic of the following biotopes

- Echinoderms and crustose communities
- Infralittoral mixed sediment
- Circalittoral Coarse sediment

The seabed within the area between the breakwater and the quay is very uneven and appears to be comprised of pockets of deeper accumulations of mud in mosaic with areas of cobble and rock, while coarser sands appear to have accumulated in a pocket towards the southeastern end of the breakwater.

Samples taken throughout the area between the breakwater and the existing quay indicated sandy gravel, coarse sands fine sands and silt/clays. No unusual or rare taxa were recorded during this survey.

Large expanses of intertidal mudflats and sandflats are present along the northern and southern shores of Carlingford Lough, where the majority is utilised for licenced aquaculture production. To the west of the development area, the intertidal area is characterised by a relatively flat sand shore. Above the strandline, coarse sediments characterised by gravel, pebbles and broken shell dominate. Below the strandline, the sediment is characterised by sand with abundant worm casts in mosaic with areas of coarser mixed sediments, boulders and cobble in an undulating pattern.

Immediately east of Greenore point is dominated by a narrow intertidal zone characterised by Shingle (pebble) and gravel shores. Further, south along the eastern side of the peninsula, the intertidal area widens out, again forming large sandflat areas dominated by aquaculture (oysters and clams).

#### 4.8.1.6 Designated Sites

The proposed development site is partially within Carlingford Shore Special Area of Conservation (SAC) and Carlingford Lough Special protection Area (SPA). Proposed Natural Heritage Areas (pNHAs) within a 15km radius of the site include Carlingford Lough, Carlingford Mountain and Dundalk Bay. Dundalk Bay is also designated as a Ramsar Site.

The Carlingford Lough Marine Conservation Zone (MCZ) lies north of the navigable channel in the inner part of the lough and within Northern Ireland.

### 4.8.2 Impact Assessment

#### 4.8.2.1 Do Nothing

There are two extant planning permissions at Greenore Port for the extension and modification of an existing warehouse (LCC Planning Ref 20268/ABP Ref 307862) and the construction of new warehouses (LCC Planning Ref 20543/ABP Ref 310184). As these are valid permissions, the respective developments represent the most likely evolution of the site under the 'Do Nothing' Scenario.

##### 4.8.2.1.1 Short Term Scenario

Each of the extant permissions has a 5-year life-term that expire December 2026 and January 2027 respectively. The programme for modifications and new build is approx. 12 months.

In the absence of development up to 2025, the following is anticipated.

The '**Terrestrial Port Area**' includes a port commodity warehouse (former Open Hydro building), hardstanding areas, a remnant wall associated with the pre-existing 'engine room', and a communications mast. Given the predominantly hardstanding nature of this area and the limited opportunity for flora to establish, no change to the existing baseline is predicted. Fauna would likely remain as described in the baseline.

The '**Nearshore Environment**' encompassing part of Carlingford Lough and an existing caisson quay wall, known as 'Berth 3'. The baseline data indicates the natural benthic environment surrounding Greenore Port, has been largely altered over the years. It is considered that, even without the



proposed development, the benthic baseline would be highly unlikely to change or improve as the current infrastructure and licensed activities will remain active in the short and medium to long term.

Marine mammals in the area, especially seals are accustomed to current levels of activity at the port and so there would be no change anticipated.

The '**Residential Site**' a greenfield site with a single-storey unoccupied residential dwelling with frontage Shore Road. The garden surrounding the vacant house may change from amenity grassland to recolonising bare ground invaded by herbaceous plants or weed plants. In urban areas, recolonising bare ground can be important for wildlife and may support a diverse flora. However, the importance would be negligible in this environment where there is an abundance of high-quality habitat in the wider area.

The '**Port Office Entrance**' encompasses 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. The biodiversity value of this location would likely remain consistent with the baseline.

#### 4.8.2.1.2 Medium Term (Post 2027)

Following the implementation of the extant permission, the following is anticipated to occur within each of the four-character areas.

The '**Terrestrial Port Area**' the existing hardstanding and built environment will be replaced with a similar built environment and would not result in an appreciable change to the existing flora and fauna baseline.

The '**Nearshore Environment**' implementation of the extant permissions would not change the ecological environment as development is not proposed at this location. Therefore, it is likely that the biodiversity of this area would remain as per the existing baseline. The development of the additional warehousing would not increase the port's throughput, and so there would be no change to disturbance levels above those already in existence and to which marine mammals in the area, especially seals, are habituated. Over time, the breakwater is likely to degrade and, without remediation, partially collapse, negatively impacting the area's roosting and nesting bird population.

The '**Residential Site**' biodiversity value is not anticipated to change over and above that described in the short-term scenario.

The '**Port Office Entrance**'. This location's biodiversity value would likely remain consistent with the baseline.

#### 4.8.2.1.3 Designated European Sites

An Bord Pleanála in determining the two extant permissions, concluded that the proposed developments by virtue of their nature, limited scale and location within an existing port area, would not be likely to have a significant effect on the Carlingford Shore SAC or Carlingford Lough SPA or any other Natura 2000 site, either alone or in combination with other plans or projects.

## 4.8.2.2 Demolition & Construction Phase

### 4.8.2.2.1 Terrestrial Mammals

The proposed development site's habitats are of limited value for fauna as evidenced by the baseline surveys.

No signs of otter were identified within the proposed works' footprint. Holts and couches may become established prior to the commencement of construction. Should this occur, then loss of holts and associated injuries to otter therein may occur. As such, the potential for impact is assessed on a precautionary basis.

No signs of badger were identified within the footprint of the proposed works. Setts may become established prior to the commencement of construction. Should this occur, then loss of setts, and associated injuries to badger therein may occur. As such, the potential for impact is assessed on a precautionary basis.

The principal construction impact on terrestrial mammals is the loss of habitat at the Residential Site, which provides limited foraging for common species. These species normally move away from disturbance, and mortality during construction is not expected or will not be substantial.

### 4.8.2.2.2 Bats

Having regard to the survey findings, neither the demolition nor construction phases are likely to impact bats and therefore there is no likely significant effect.

### 4.8.2.2.3 Marine Mammals

Construction activities will involve underwater noise/vibration disturbance during the construction period. Marine mammals are vulnerable to impacts from increased noise levels, and their sensitivity to different frequencies depends on the species. Seals are the marine mammals most likely to be exposed to construction activities, as cetaceans only rarely occur within Carlingford Lough.

Direct impacts on marine mammals may occur during piling (Berth 3 and Pontoon) and dredging. Potential direct impacts from piling may arise if seals are very close to the quay and pontoon during start-up. Potential direct impacts from dredging may arise if seals are very close to the dredging site during start-up (and to a lesser extent porpoise or dolphins).

### 4.8.2.2.4 Avifauna

Black guillemots have proven to be well habituated to activity in the port, but it is possible that the pile driving element of the marine piling works may disturb nesting, through startling causing eggs to break, and the nest to be abandoned. Black guillemots generally lay about 20<sup>th</sup> May and fledge young around the end of June.

The development is unlikely to affect nesting corvids in the golf course given their habituation to the activities in the port.

Similarly, the development is unlikely to impact nesting gulls on Green Island. It is possible that dredging, specifically the rock breaking element, could impact breeding terns, should they perform, but given the course nature of the dredge, this impact is considered to be minimal and unlikely to have a significant effect.

An impact to the habitat (*Zostera noltei* beds) which is the primary food source for Brent Geese has been identified from the potential for accidental spillage of hydrocarbons associated with small vessels, jack-up barges and associated plant which may be required to operate in the proposed project area adjacent to this habitat.

Based on the distribution of Brent geese around the lough, it is unlikely that they will be temporarily displaced due to noise and visual disturbance impacts. However, applying the precautionary approach an impact could occur from the startle effect caused by the pile-driving element of the marine piling works.

As regards, waterbirds associated with the SPA an impact to the habitat (*Zostera noltei* beds) which is the primary food source for this species has been identified from the potential for accidental spillage of hydrocarbons associated with small vessels, jack-up barges and associated plant which may be required to operate in the proposed project area adjacent to this habitat. Similarly, accidental spillage of hydrocarbons and cementitious material also has the potential to impact the benthic habitats and their associated invertebrate community upon which other wildfowl associated with this SPA feed.

The installation of the extension to the quay wall will lead to the loss of 153.7 Square meters (0.015 hectares) or 0.00252% of the Wetland and Waterbirds habitat within Carlingford Lough SPA. The dredge area where the habitat will change from intertidal to sub-tidal represents 3,000 sq m. This area will be lost as intertidal foraging over mixed substrate and become subtidal habitat.

It is unlikely that waterbirds will be displaced due to noise and visual disturbance impacts. However, applying the precautionary approach an impact could occur from the startle effect caused by the pile-driving element of the marine piling works.

#### 4.8.2.2.5 Benthic Environment

A range of potential project-related pressures with the potential to act on benthic habitats were identified at the construction phases of the project. Notably, the review did not identify evidence that the demolition elements of the project would potentially impact the benthic habitats.

The sediment habitat within the proposed dredge and construction area is comprised of relatively coarse materials and previous dredge campaigns in this area did not result in a significant sediment plume. It is therefore anticipated that any sediment mobilised will be rapidly dispersed in the local area.

The biotopes are assessed as sensitive to smothering pressures. However, the area affected will be too small and localised to impact these biotopes. Therefore, no significant impacts associated with either the dredging or quay wall and pontoon construction phases on any sensitive habitats is anticipated.

Inshore working vessels and equipment associated with the construction phase of the project have the potential to lead to localised impacts on marine and coastal species resulting from accidental

spillage of hydrocarbons. However, due to the size of these vessels their use of hydrocarbons is relatively low.

Fish, invertebrates and seaweed that come in direct contact with a diesel spill may be killed. The area of impact of accidental fuel spills will be dependent on the volume spilled and weather and dispersion conditions. It is considered that, without mitigation, there is a potential for impact on the sensitive biotopes during the construction phase of the project.

The physical zone of impact of abrasion and disturbance during construction will be limited to the development footprint adjacent to the quay wall, and the dredge area. While there are two common biotopes that will be impacted during the construction phase, it is considered that they will re-establish within the short term (<5 years<sup>1</sup>) following dredging. Therefore, no significant impact on these two biotopes is anticipated.

The installation of the quay wall (Berth 3) and the insertion of two piles associated with the pontoon will lead to the loss of benthic habitat. No Annex I habitats are represented within these areas of loss. Therefore, no significant impact on biotopes is anticipated.

The installation of the extension to the quay wall will result in the loss of Wetlands and Waterbird habitat within Carlingford Lough SPA. The importance of the intertidal foraging area is minor due to its hard character, and limited availability.

Small vessels and plant working in intertidal areas can potentially contribute to the spread of alien invasive species in the northeast of Ireland and other SACs in this area if not adequately mitigated for during the construction phase.

#### 4.8.2.2.6 Designated European Sites

The Appropriate Assessment screening identified potential for the project, alone and in combination with other projects and plans, to have adverse effects on the integrity of the following European sites:

- Carlingford Shore SAC
- Carlingford Lough SPA
- Rockabill to Dalkey Island SAC

Disturbance related to the construction works on waterbirds is considered likely to trigger a small temporary displacement for the gull species and possibly a more permanent displacement for a small number of waders. However the operation of the facility is highly unlikely to impact the conservation objectives of these Designated European sites. Therefore, no long term impact is considered likely.

No significant impact on waterbirds utilising the golf course is considered likely. For this reason, likely significant effects on SPAs designated for waterbirds within the development site's foraging range are not considered likely.

No significant adverse effects are predicted on other more distant SPA's

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<sup>1</sup> Short-term as defined by Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022)

### 4.8.2.3 Operational Phase

#### 4.8.2.3.1 Terrestrial Habitat

The terrestrial development area has been subject to significant human modifications and has limited biodiversity value. It is considered highly unlikely that further modifications would impact terrestrial habitats.

The landscape design integrates habitat enhancement measures through the selection of native planting and species. The effect of these measures is likely moderately positive, at the local level with a permanent duration.

#### 4.8.2.3.2 Terrestrial Mammals

The development site's habitats are of very limited value for fauna, having regard to the largely built nature of the existing environment. The proposed operational phase will have no perceptible impact on terrestrial mammals.

#### 4.8.2.3.3 Bats

There are no predicted significant negative impacts on bat species from the proposed development.

#### 4.8.2.3.4 Marine Mammals

Both seals and cetaceans are likely to be exposed to potential disturbance during the operational phase. The effect of disturbance and collision risk from crew transfer vessels (CTVs) will likely reduce as marine mammals learn to avoid the area after repeated use. Clearly, it is important that CTV routes do not pass through (or close to) important habitats.

#### 4.8.2.3.5 Avifauna

It is unlikely that the operational stage will have a significant adverse effect on the local avifauna population.

#### 4.8.2.3.6 Benthic Environment

It is considered that, without mitigation, there is a potential for pollution to impact on sensitive biotopes during the operational phase of the project.

Vessels visiting the pontoon area can contribute to the spread of invasive species in the northeast of Ireland if not adequately mitigated.

The area directly under the proposed new pontoon and access gangway will be subject to shading effects., however the biotopes present in this area are not sensitive to shading and therefore, no shading impact is foreseen.

Fouling of the wetted surface of structures e.g. by mussels frequently leads to an alternation of the benthic habitat directly below and radiating out for a number of meters from the structure. However, the tide across this area is likely to prevent the formation of significant residues. Furthermore, the biotopes at this location would not be sensitive to the effects.

#### 4.8.2.3.7 Designated European Sites

The Supporting Information for Appropriate Assessment Screening Report identifies likely significant effects on European Sites, and accordingly, a Natura Impact Statement accompanies the application.

With the application of mitigation it concludes that there will be no adverse effect on the integrity of a European Site.

#### 4.8.2.4 Cumulative Impact

The potential cumulative effects of the project with other projects, plans and activities has been taken into account.

Construction noise and aquaculture operations in the vicinity of the port have the potential to displace brent geese and waterbirds from their preferred foraging habitat. Aquaculture activities may also impact wetlands and waterbirds habitat and/or contribute to habitat loss.

Construction noise may also cause disturbance to Harbour porpoise.

### 4.8.3 Mitigation

#### 4.8.3.1 Incorporated Design

The design integrates enhancement measures for swifts in the form of 10 swift boxes per OMF building, for a total of 30 boxes.

The landscape design is carefully considered to ensure that all species are capable of thriving within this coastal setting. Native species are included together with pollinators as advised by the All Ireland Pollinator Plan.

#### 4.8.3.2 Demolition and Construction Phase

##### Mitigation Measure No. 1

Where feasible, the timing of the clearing of the vegetation within the 'Residential Site' will avoid the bird breeding season (March-August inclusive). Where the construction programme does not allow this seasonal restriction to be observed, a pre-clearance check of that area of the proposed development site for nests will be carried out by a suitably qualified ecologist in advance of commencing the clearance. Where it can be confirmed that no nesting birds are present, the clearance will commence. Where breeding birds are confirmed to be present, the clearance must not commence until it can be confirmed that the chicks have fledged.

##### Mitigation Measure No. 2

Prior to any works commencing the Construction Environment Management Plan (CEMP) will be reviewed and updated by the Contractor. It will, inter alia, include all of the mitigation measures detailed in this section. The CEMP will be reviewed by a qualified ecologist to ensure it meets the requirements of this chapter and the Natura Impact Statement.

In addition, the CEMP will detail the relevant person with overall responsibility for the implementation for the CEMP.

The CEMP will include details of the following:

- Details of all chemical/fuel storage areas (including location and bunding to contain run-off of spillages and leakages).
- Details of how and where hazardous wastes such as oils, diesel and other hydrocarbon or other chemical waste are to be stored and disposed of in a suitable manner.



- Details of emergency plan to deal with the containment of chemical spillage, cement spillage.
- Truck wheel wash details (including measures to avoid and treat runoff).
- Site run-off management, including details of appropriate containment measures to be put in place at the quayside to prevent contamination of the lough.
- A Waste Management Plan (WMP) which clearly sets out the Contractor's proposals regarding the treatment, storage and disposal of waste.

### **Mitigation Measure No. 3**

Care will be taken at all times to avoid contamination of the environment with cementitious material. A protocol for the management of cement will be prepared. Specifically, this should detail measures to:

- Assess where any wastewater associated with the use of cement will run and the most appropriate way to dispose of it.
- Ensure that an appropriate area of the site, at least 50m from the marine area, is designated for concrete delivery. Further, ensure this area is away from stormwater drains or that drains and gutters in the vicinity have been blocked off.
- Use spill mats to contain any spills.
- Use sandbags or diversion booms to direct any run-off to an appropriate safe location away from marine areas.
- Set up a designated Washdown Area away from marine areas or with potential to run-off to it.
- Ensure proper management in the event of an accidental spill.

### **Mitigation Measure No. 4**

The assessment of impacts indicated that the accidental spillage of hydrocarbons had the potential to lead to a localised significant impact on the receiving environment. Therefore, the following mitigation will be implemented during the construction phase to avoid the possibility of accidental spillage of any hydrocarbons associated with the use of plant, machinery or inshore vessels (if used).

The proper use and storage of oils and fuels as set out below will be implemented by the appointed contractor.

- A designated area within the site compound will be established for the storage of plant, machinery and materials during the construction phase of the project. The site compound will be suitably located with due regard for the receiving environment and in particular the sensitive receiving waters.
- All plant and machinery will be refuelled at a dedicated refuelling area within the site compound with appropriate spill controls in place.
- All plant and machinery will be regularly checked for leaks.
- Any hydrocarbons used on the project site will be contained within a bunded container or area.
- A hydrocarbon oil boom to be available at all times onsite in the event of it needing to be deployed.
- If required, generators to be on a hydrocarbon mat at all times.
- A spill kit to deal with any accidental spillage of hydrocarbons will be available at the project site.

- The roles and responsibilities of construction and associated staff regarding the protection of the receiving environment will be clearly set out and documented.

#### **Mitigation Measure No. 5**

The assessment of impacts indicated the potential for the introduction of IAS associated with plant and small vessels working in the intertidal and subtidal areas. Therefore, the following mitigation will be implemented by the developer:

Boats, barges and marine equipment working in the intertidal and nearshore area will be free of fouling by the use of appropriate application of antifouling paints and/or washdowns for smaller boats and plant. All visible hitchhikers will be removed from any tracked plant and equipment entering the intertidal area.

#### **Mitigation Measure No. 6**

Where feasible, the pile driving element of the marine piling works will not take place between the 20th of May and the 30th of June. Where the construction programme does not allow this seasonal restriction to be observed, a pre-construction check of the breakwater for nesting black guillemot will be carried out by a suitably qualified ecologist in advance of commencing the pile driving works. Where it can be confirmed that no nesting birds are present, the pile driving will commence. Where birds are confirmed to be present, the pile driving works must not commence until it can be confirmed that the chicks have fledged, and the site has been abandoned.

#### **Mitigation Measure No. 7**

Where feasible, any rock-breaking element of the capital dredge will not take place between the 20th of May and the 30th of June. Where the construction programme does not allow this seasonal restriction to be observed, a pre-construction check of the breakwater for nesting black guillemot will be carried out by a suitably qualified ecologist in advance of commencing the rock-breaking works. Where it can be confirmed that no nesting birds are present, the rock breaking will commence. Where birds are confirmed to be present, the rock-breaking works must not commence until it can be confirmed that the chicks have fledged, and the site has been abandoned.

#### **Mitigation Measure No. 8**

To mitigate any startle effect from the pile-driving element of the piling works on overwintering birds, a suitably qualified observer will monitor that aspect of the works, and piling driving will start later than the general construction operation commencement on each day to ensure a slow start-up to habituate the birds.

#### **Mitigation Measure No. 9**

NPWS (2014) provides guidance to manage the risk to marine mammals from man-made sound sources in Irish waters. This document provides guidance and mitigation measures to address key potential sources of anthropogenic sound that may impact negatively on marine mammals in Irish waters. The mitigation methods should follow the guidance prescribed by the NPWS to avoid PTS. The guidance set out in NPWS (2014),

### **Mitigation Measure No. 10**

A suitably qualified, and experienced Marine Mammal Observer during piling and dredging to implement NPWS (2014) Guidelines (and any amendments).

### **Mitigation Measure No. 11**

A pre-demolition bat survey of structures proposed for demolition for bats will be carried out by a suitably qualified ecologist.

The mitigation measures for dust are contained in Chapter 14 of this EIAR and water in Chapter 10.

#### **4.8.3.3 Operational Phase Mitigation**

### **Mitigation Measure No. 12**

The assessment of impacts indicated that the accidental spillage of hydrocarbons from smaller vessels using the pontoon had the potential to lead to a localised impact on the receiving environment. Therefore, the following mitigation will be implemented during the operational phase of the project to avoid the possibility of accidental spillage of any hydrocarbons:

- Refuelling of vessels via decanting from containers will not be permitted at the pontoon or within the port area.
- Bilges and/or ballast water (if relevant) will not be emptied at the pontoon.
- Detergent will not be used to clear up small spills of hydrocarbons. Oil absorbent cloths will be used instead.
- Greenore Port will maintain a kit of oil absorbent cloths and small booms to deal with accidental spillages.
- Oil absorbent collars will be fitted around the fuel nozzle to catch any drips or overflow.
- Clear signage indicating refuelling protocols will be displayed at the pontoon.

### **Mitigation Measure No. 13**

The assessment of impacts indicated the potential for the introduction of IAS through small boats using the marina. Therefore, the following mitigation will be implemented by the developer:

- Recreational vessels will not be permitted to use the pontoon.
- Ballast water (if relevant) will not be discharged within the port area.
- Regular inspections of the hulls of visiting vessels for obvious IAS will be carried out by the operators.
- Clear signage indicating biosecurity protocols will be displayed at the pontoon.
- Staff will be trained in the identification of obvious IAS.
- Fouled vessels should not be allowed to enter the pontoon area.
- Any IAS recorded will be reported to the National Biodiversity Data Centre.

### **Mitigation Measure No. 14**

Outside of Carlingford Lough, disturbance to marine mammals during operation may occur as vessel traffic will increase. The new quay wall and pontoons will provide berths for up to 11 CTV which will access the North Irish Sea from Greenore. These vessels will be required to use existing channels on

the approach to and from the port. Each vessel pilot and captain is responsible to act accordingly and slow speeds to match environmental conditions and restrict any risk of wake. Once clear of the Lough vessels will reach operational speed, which could cause disturbance and a collision risk to marine mammals. In accordance with Maritime Notice 15, a speed limit of 7knots is to be adhered to when encountering areas of mammal populations. These routes have not yet been established and disturbance and displacement will need to be considered by each ORE project through the environmental assessment undertaken for those projects.

#### **Mitigation No. 15**

Post-construction (Phase 1 and Phase 2) survey of seals in June and September to ensure haul out sites still being used by common and grey seals.

#### **4.8.4 Residual Impact Assessment**

Following implementation of mitigation measures during the construction phase to reduce pollution, abrasion and disturbance, habitat loss, introduction of invasive species, and displacement of seals and birds, no likely significant adverse effects will arise.

Implementation of operational phase mitigation to reduce pollution, the introduction of invasive species, shading/fouling, displacement of marine mammals and birds, no likely significant adverse effects will arise.

#### **4.8.5 Monitoring**

The project will be monitored by a suitably qualified ecologist. The ecologist will be familiar with the ecological significance of the site, the practical constraints of the site and all of the proposed mitigation outlined in this document and any associated relevant conditions that may be a condition of consent. The project ecologist will liaise closely with the on-site project supervisor during both the pre-construction and construction phase of the project.

### **4.9 Coastal Processes**

RPS Ireland Ltd have undertaken an extensive numerical modelling programme to assess the potential impact of the proposed Greenore Port O&M Facilities project on coastal processes around the Greenore Port area. Specifically, the assessment considered information about the tidal regime, inshore wave climate and sediment dispersion to enable the competent authority to assess the potential impacts on coastal processes.

The assessment of Coastal Processes is contained within Chapter 12 of Volume II.

#### **4.9.1 Existing Environment**

In respect of the tidal regime, current velocities within the study area were found to be greatest between Greenore Point and Greencastle Point whereby tidal velocities can regularly exceed 1.0m/s owing to the nature of constricted flows in this region. Current velocities subsequently decrease further within the Lough as the tidal regime becomes less constricted. Current velocities within the

Port area were found not to typically exceed 0.5m/s during most tidal phases owing to the sheltering effect of Greenore Point except during mid-ebb conditions during which current velocities can exceed 1.0m/s.

The existing tidal regime was found to be sufficient to create natural flushing conditions within the Port which in turn would generally reduce sedimentation and thus the need for extensive maintenance dredging. These findings were in line with observations and records of the harbour master.

Regarding the wave climate, simulations were undertaken to characterise 1 in 50 year return period storm conditions at Greenore Port. It was found that storm waves from the Irish Sea are greatly attenuated by the complex bathymetry at the entrance to the Lough. Wind waves generated across the northern fetches were found to produce the most arduous conditions at Greenore Port. Consequently, the size of the waves at Greenore Port would be very much smaller than those generated by storm winds over local fetches in Carlingford Lough itself.

Specifically, the spectral wave modelling found that it was storms from 300°N that produced the most arduous conditions at Greenore Port, with significant wave heights of 1.34m and corresponding wave peak wave periods of 4.13s being observed within the vicinity of the Port.

Littoral currents are the result of the combined action of tides, wind and waves on the current regime and are primarily responsible for the suspended and bed-load transport of sediment material within a coastal environment. As such, littoral currents can be used as a proxy to infer the potential direction and rate of sediment transport.

It was found that the inclusion of wind and wave conditions enhanced current velocities throughout the study area, particularly during mid-flood conditions whereby velocities around Greenore Point increased from c. 1.1m/s to more than 1.4m/s.

#### **4.9.2 Impact Assessment**

RPS used the MIKE 21 hydrodynamic numerical modelling software package by Danish Hydraulic Institute (DHI) to address potential coastal process issues. This was achieved by developing a range of two-dimensional numerical models to represent:

- The pre-project scenario.
- The post-project scenario with the proposed development in place.

These models were used in conjunction with hydrographic survey data to assess the construction and operational impacts of the Greenore O&M Facilities Project in the context of the following coastal processes:

- The tidal regime;
- The inshore wave climate;
- The dispersion and settlement of sediment plumes generated during dredging operations; and
- Sediment dynamics and the morphological response of the seabed around Greenore Port.

#### 4.9.2.1 Do Nothing

If the proposed development was not to go ahead (i.e. in the Do-Nothing scenario) there would be no dredging works or alteration to the existing maritime development. As such, there would be a neutral effect on the existing coastal processes, i.e., the tide, wave and sediment transport regime.

#### 4.9.2.2 Demolition Phase

No demolition works are proposed as part of the maritime development.

#### 4.9.2.3 Construction Phase

In the context of coastal processes, the element of the proposed development that has the potential to result in construction phase impacts is the dredging works within the vicinity of Berth 3. Approximately 45,000m<sup>3</sup> cubic meters of material will be dredged in this area to facilitate navigable access with material being disposed of on land.

Temporary impacts on water quality have the potential to occur during the construction phase of the works, i.e. the dredging operations. Mobilised suspended sediment release through backhoe dredging is the principal potential source of environmental impact. The potential impacts from the increase in background suspended sedimentation concentrations (SSCs) and deposition levels as a result of the capital dredging operation of the construction phase were assessed using the Mud Transport module in the DHI software package.

It was demonstrated that during periods of high water, SSC plumes can be seen to extend north-east for up to c. 250m before sediment settles back to the seabed or is fully dispersed to below background levels. The total SSC of these plumes is typically less than 4.0mg/L. Resultant sediment plumes during typical low water conditions were found to be extremely limited and confined exclusively within the limits of Greenore Port owing to the near slack conditions during this period.

Over the course of a typical tidal cycle, the average SSC was found to be generally less than 1.0mg/L with the resultant plume being mostly confined to within the Greenore Port area. Beyond the Port area, the SSC of plumes was generally less than 0.5mg/L. Importantly, there was no detectable increase in sediment concentrations within the vicinity of the nearby aquaculture sites within Carlingford Lough.

The total deposition of sediment material upon completion of the dredging works was found to be less than 5cm. In reality, dredging would proceed until the specified design depth is reached and any material deposited within the dredge area would be dredged until the specification is met.

#### 4.9.2.4 Operational Phase

Port development consisting of the construction of structures and/or changes in the configuration of the seabed bathymetry through capital dredging works has the potential to impact coastal processes. In particular, the proposed depth alterations to the seabed and associated restoration of the existing breakwater to -4.0m Chart Datum (CD) crest level has the potential to impact the following coastal processes during the operational phase of the project:

- Tidal current patterns within Greenore Port and Carlingford Lough.
- Sedimentation and erosion patterns within Greenore Port and Carlingford Lough.



- The inshore wave climate within Greenore Port and the surrounding area.
- Prevailing water levels and the existing flood risk in Greenore Port and Carlingford Lough.

In respect of operational phase impacts to the existing tidal regime, the maximum predicted change to the mid-flood or ebb current speeds *within* the confines of Greenore Port was generally less than  $\pm 0.65\text{m/s}$ . During periods of high or low tide, changes *within* the confines of Greenore Port do not generally exceed  $\pm 0.35\text{m/s}$ . These highly localised changes were attributed to the dredged seabed levels which result in local changes to the hydrodynamic regime. Changes to the current velocities beyond the confines of Greenore Port did not typically exceed  $\pm 0.35\text{m/s}$  and were limited to within a c. 200m vicinity.

As such, the tidal regime is predicted to remain substantially unchanged following the construction of the proposed development and no notable changes to the tidal regime were detected beyond the immediate vicinity of Greenore Port (i.e., beyond +200m).

Operational phase impacts also considered included potential alteration to wave climate and its associated possible impact on the coastline with respect to erosional pressure. The assessment found that the proposed development resulted in a decrease of significant wave heights within the confines of Greenore Port by up to c. 0.25m. This was expected given that it is possible that the proposed development may include some restoration of crest levels along the existing breakwater from c. +3.5m Chart Datum (CD) to c. +4.0m CD.

In addition to the change described above, there was also a very localised increase in significant wave heights of c. 0.25m along a short section of the coastline within Greenore Port. This localised change would not increase erosional pressures given that this section of the coastline is comprised of hard infrastructure complete with coastal defences. This change is considered permanent, neutral and imperceptible.

In summary, changes to the wave climate following the construction of the proposed development are not considered significant and would not impact operations within the Port or erosional pressures on adjacent coastlines beyond the vicinity of Greenore Port.

As noted previously, littoral currents are the result of the combined action of tides, wind and waves on the current regime and are primarily responsible for the suspended and bed-load transport of sediment material within a coastal environment. This assessment found that the littoral current regime would remain substantially unchanged following the construction of the proposed development. No notable changes to the littoral current regime were detected beyond the immediate vicinity of Greenore Port (i.e., beyond +200m).

Sediment on the seabed is transported when it is exposed to large enough forces, or shear stresses, by the water movements. These movements can be caused by the current or by the wave orbital velocities or a combination of both. The relevant parameters that govern sediment transport within a coastal environment are therefore based on the following coastal processes:

1. Wave conditions at the site and the possible variations over a site.
2. Current conditions as well as the variations of current over an area.
3. Water-level conditions, i.e., tide, storm surge and wave set-up.

4. Bathymetry variations in an area.
5. The sediment characteristics over an area.
6. The sources and sinks of sediment, such as rivers or tidal inlets.

The numerical modelling programme undertaken for this assessment demonstrated that the proposed development would have no significant impact on these processes. It can be concluded therefore that the proposed O&M Facilities development would not result in a significant impact on the sediment transport regime at Greenore or the wider Carlingford Lough area.

#### 4.9.2.5 Cumulative Impact

A review of relevant existing and/or approved projects was undertaken and concluded that there are no developments within the surrounding area that may interact with the proposed development in terms of coastal processes owing to the very localised impact on tides, waves and sediment transport (including sediment dispersion).

Aside from cumulative impacts with approved projects, it is recognised that there are sixteen licensed aquaculture sites within a 1.5km zone of influence from the proposed development. However, the proposed development is not expected to result in a significant impact on coastal processes within the vicinity of any of these licensed aquaculture sites.

### 4.9.3 Mitigation

#### 4.9.3.1 Incorporated Design

There were no design mitigations arising from the assessment of coastal processes.

#### 4.9.3.2 Demolition Phase

No demolition works are proposed as part of the maritime development.

#### 4.9.3.3 Construction Phase

Whilst the potential impact to existing coastal processes as a result of proposed construction phase activities is considered not significant, in-line with best practice the following mitigation measures would still apply to the proposed dredging campaign:

- A documented Accident Prevention Procedure will be put in place before commencement.
- A documented Emergency Response Procedure will be put in place before commencement.

The above mitigation measures would ensure the likelihood of construction phase works that could result in a potential risk to receiving water environment remains unlikely.

#### 4.9.3.4 Operational Phase

Given the insignificant impact on existing coastal processes, no mitigation measures are considered necessary during the operational phase of the proposed development.

#### 4.9.4 Residual Impact Assessment

The implementation of the mitigation measures outlined above will ensure that the potential risk to coastal processes would be negligible thus reducing the significance of environmental impact to imperceptible.

#### 4.9.5 Monitoring

Given the lack of potential impacts to coastal processes as a result of the proposed development, no monitoring measures have been proposed.

### 4.10 Noise & Vibration

The assessment of Noise & Vibration is contained within Chapter 13 of Volume II.

#### 4.10.1 Existing Environment

The baseline noise environment has been established through an attended and unattended environmental noise survey conducted at the site in order to quantify the existing noise environment. The survey was conducted in accordance with ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

#### 4.10.2 Impact Assessment

##### 4.10.2.1 Do Nothing Scenario

In the Do Nothing scenario it is expected that the noise environment will remain as per the baseline which will include the operational port noise in its existing state (this includes 24/7 operation of the facilities with ship movements to and from the port). It's noted that there are two permitted developments planned for implementation in the absence of the proposed development.

- Extension and modification of existing Warehouse, LCC Planning Ref 20268, ABP Ref 307862; and
- New Warehouse, LCC Planning Ref Planning ref 20543, ABP Ref 310184.

##### 4.10.2.2 Construction and Demolition Phase

###### 4.10.2.2.1 Construction Noise

In terms of the potential noise and vibration impacts indicative ranges of noise levels associated with construction may be calculated in accordance with the methodology set out in BS 5228-1:2009+A1:2014. This standard sets out sound power / sound pressure levels for plant items normally encountered on construction sites, which in turn enables the prediction of noise levels.

Calculations have been undertaken for both phases of the construction programme. The results indicate that construction noise levels have the potential to exceed the adopted Construction Noise Threshold (CNT) of 65 dB  $L_{Aeq, 12hr}$  at R1 to R4 during demolition works and during the piling works for the buildings. During the construction of the proposed buildings and the port entrance upgrades there is a predicted exceedance of the CNT at R2. Dredging works are proposed to occur during the night periods and exceed the thresholds at receptors R1 to R3. These receptors are likely to experience a

negative, significant, and temporary effect. The resultant impacts at the remaining receptors for the remainder of the phases are negative and range from not significant to moderate, and temporary.

#### 4.10.2.2.2 Construction Traffic Noise

Calculations of changes in noise levels due to construction traffic indicate that any change in noise level due to traffic will be imperceptible.

#### 4.10.2.2.3 Construction Vibration

In terms of piling, data has been sourced from British Standard BS 5228 – Part 2: Vibration, which publishes empirical data of construction vibration levels.

During Phase 1 the impact due to driven piling in terms of human response at receptor R1 is predicted to be temporary, negative and significant in the absence of mitigation. The remaining receptors will experience an imperceptible to slight negative impact.

During Phase 2 the impact due to driven piling in terms of human response at receptor R2 is predicted to be temporary, negative and significant in the absence of mitigation. The remaining receptors will experience an imperceptible to slight negative impact.

The impacts due to driven piling in terms of building response during all phases are predicted to be temporary, negative and not significant in the absence of mitigation.

Breaking impacts have been assessed using previously measured vibration levels by AWN from similar activities on a sample site, as well as measured data from previous rock dredging at the Greenore site. The measurements indicate that vibration impacts from breaking will be temporary, negative and not significant to slight.

#### 4.10.2.3 Operational Phase

For the assessment of the operational stage guidance has been drawn from the EPAs NG4 document; BS 8233:2014: Guidance on sound insulation and noise reduction for buildings; and the Design Manual for Roads and Bridges.

##### 4.10.2.3.1 Operational Activities

A 3D computer-based acoustic prediction model has been prepared in order to quantify the noise level associated with the operational activities of the Proposed Development. The model has sourced noise data from BS5228 and the Imagine EU database to inform the model. The results of the modelling exercise indicate noise levels fall significantly below the adopted EPA NG4 noise limits for night-time periods (and hence, also for the less onerous day periods), and that internal noise levels within nearby residences will be within the BS8233 recommended internal noise levels when residents have windows open. It is considered the impact due to the operation of the port will be negative, slight and long-term.

##### 4.10.2.3.2 Change in Noise Level due to Road Traffic

Calculations have been undertaken to predict the change in noise level from additional traffic on public roads due to the Proposed Development. The results of the calculations indicate that changes in noise level due to additional traffic on public roads will be imperceptible at receptor locations.

An additional assessment of noise due to car parking activities indicates that noise levels will be within the adopted criteria.

Overall, the impact is considered to be negative, not significant and long-term.

#### 4.10.2.4 Cumulative Impact

Developments within the local area have been considered cumulatively for both the construction and operation stage. Given the distance of the developments to the Proposed Development it is concluded that no additional significant impacts will occur as a result of cumulative noise or vibration.

### 4.10.3 Mitigation

#### 4.10.3.1 Construction Phase

Mitigation measures proposed during the construction phase are in line with the guidance contained within BS5228: 2009 + A1 2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 1 Noise for appropriate mitigation measures, which offers detailed guidance on the control of noise and vibration from construction activities. Various mitigation measures will be considered and applied during the construction of the proposed development to minimise the noise and vibration impacts where practicable.

#### 4.10.3.2 Operational Phase

No specific physical mitigation measures are required for the operational phase. At the detailed design stage operational noise levels from building services plant at the nearest noise sensitive locations either external to or internal to the development will be designed/attenuated to meet the noise criteria.

A range of 'good practice' measures have been detailed within the document that detail appropriate staff behaviours when arriving on site at the Shore Road Car Park.

### 4.10.4 Residual Impact Assessment

#### 4.10.4.1 Construction Phase

Predictions indicate that some significant impacts will still occur post mitigation, however, it should be noted that this occurs only when construction works are closest to the receptor locations. Mitigation has reduced the number of receptor locations and activities with a significant impact. Additionally, for a large portion of the time the noise levels will likely be lower than those predicted. Notwithstanding, any periods of significance will be brief to temporary in nature. The resultant impacts will be negative, they will range from not significant to significant dependant on the location of the work and the receptor, and the impacts will be brief to temporary.

#### 4.10.4.2 Operational Phase

Residual effects are negative, slight and long-term for operational noise sources and negative, imperceptible and long-term for operational traffic.

#### 4.10.5 Monitoring

Any noise monitoring should be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise. There is no monitoring recommended for the operational phase of the development as impacts due to noise and vibration are predicted to be not significant.

### 4.11 Air Quality

The assessment of Air Quality is contained within Chapter 14 of Volume II.

AWN Consulting Limited conducted an assessment of the likely impact on air quality associated with the proposed development at Greenore Port, Greenore, Co. Louth.

#### 4.11.1 Existing Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO<sub>2</sub>), particulate matter less than 10 microns (PM<sub>10</sub>) and particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and are generally well below the National and European Union (EU) ambient air quality standards.

#### 4.11.2 Impact Assessment

##### 4.11.2.1 Do Nothing Scenario

Under the Do-Nothing scenario the proposed development will not be constructed. In this scenario, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area. In the absence of the proposed development the following Greenore Port permitted developments are planned for construction and operation:

- Extension and modification of existing Warehouse, LCC Planning Ref 20268, ABP Ref 307862; and
- New Warehouse, LCC Planning Ref Planning ref 20543, ABP Ref 310184.

##### 4.11.2.2 Demolition and Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document 'Guidance on the assessment of Dust from Demolition and Construction'. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health and ecological effects. The surrounding area was assessed as being of high sensitivity to dust soiling, of low sensitivity to dust-related human health effects and of medium sensitivity to dust-related ecological effects.

The sensitivity of the area was combined with the dust emission magnitude for the site under three distinct categories: earthworks, construction and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most a high risk of dust related impacts associated with the proposed development. In

the absence of mitigation there is the potential for direct, short-term, negative, and slight impacts to air quality.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2022 guidance document 'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106'. As a result a detailed air assessment of construction stage traffic emissions has been scoped out from any further assessment and the construction stage traffic emissions will have a direct, short-term, negative and imperceptible impact on air quality.

#### 4.11.2.3 Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. The change in traffic associated with the operational phase of the proposed development did not meet the PE-ENV-01106 criteria requiring a detailed air dispersion modelling assessment. Therefore, it can be determined that during the operational phase, the proposed development will have a direct, long-term, negative and imperceptible impact on air quality.

#### 4.11.2.4 Cumulative Impact

##### 4.11.2.4.1 Construction Phase

There is the potential for cumulative impacts to air quality should the construction phase of the proposed development coincide with that of other developments within 500m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken and relevant developments with the potential for cumulative impacts were identified.

There is a medium risk of dust impacts associated with the proposed development. The dust mitigation measures outlined in Section 14.9 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development and the permitted cumulative developments are deemed direct, short-term, negative and not significant, which is overall not significant in EIA terms.

##### 4.11.2.4.2 Operational Phase

The direct impacts of the operational phase on air quality associated with the proposed development are predicted to be imperceptible. Cumulative impacts are considered direct, long-term, negative and imperceptible, which is overall not significant in EIA terms.

Overall no significant impacts to air quality are predicted during the construction or operational phases of the proposed development.



### 4.11.3 Mitigation

#### 4.11.3.1 Construction Phase

Detailed dust mitigation measures are outlined within Chapter 14 to ensure that no significant nuisance as a result of construction dust emissions occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance 'Guidance on the Assessment of Dust from Demolition and Construction' as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the proposed development are considered, direct, short-term, negative and not significant, posing no nuisance at nearby sensitive receptors (such as local residences).

#### 4.11.3.2 Operational Phase

As the predicted concentrations of pollutants will be imperceptible no mitigation is required. The impact to air quality has been assessed as direct, long-term, negative and imperceptible.

## 4.12 Climate

The assessment of Climate is contained within Chapter 15 of Volume II.

AWN Consulting Limited conducted an assessment of the likely impact on climate associated with the proposed development at Greenore Port, Greenore, Co. Louth.

### 4.12.1 Existing Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA estimate that Ireland had total GHG emissions of 60.76 Mt CO<sub>2</sub>e in 2022. This is 3.72 Mt CO<sub>2</sub>e higher than Ireland's annual target for emissions in 2022. EPA projections indicate that assuming full implementation of the Climate Action Plan and the use of the flexibilities available Ireland can achieve an emissions reduction of 30% by 2030.

### 4.12.2 Impact Assessment

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies adaptation measures to increase project resilience.

#### 4.12.2.1 Greenhouse Gas Assessment

Calculation of the GHG emissions associated with the construction of the proposed development was calculated using the online TII Carbon Assessment Tool. GHG emissions associated with the proposed development are predicted to be a small fraction of Ireland's Industry and Residential sectors 2030 emissions ceilings of both 4 Mt CO<sub>2</sub>e. The proposed development will incorporate some mitigation

measures which will aim to reduce climate impacts during construction and once the development is operational.

GHG emissions during the operational phase due to road traffic were assessed. The changes in traffic volumes associated with the operational phase of the development were not substantial enough to meet the assessment criteria requiring a detailed climate modelling assessment, as per Transport Infrastructure Ireland (TII) 2022 guidance “PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document”. The proposed development has incorporated a number of sustainability measures into the design of the development which will aid in reducing impacts to climate once operational.

Impacts to climate are deemed **direct, long-term, negative** and **slight**, which is considered **not significant** with regard to the construction phase and operational phase.

#### 4.12.2.2 Climate Change Risk Assessment

A CCRA was conducted to consider the vulnerability of the proposed development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning, hail and fog. The proposed development is predicted to have at most low vulnerabilities to the various climate hazards and therefore the effect of climate change on the proposed development is considered **direct, short-term, negative** and **imperceptible** with regard to the construction phase, and **direct, long-term, negative** and **imperceptible** with regard to the operational phase.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the proposed development.

#### 4.12.3 Mitigation and Residual Effects

A number of best practice mitigation measures are proposed for the construction phase of the proposed development to ensure that impacts to climate are minimised. Design mitigation has been considered when assessing the vulnerability of the development to future climate change.

The impact to climate as a result of a proposed development must be assessed as a whole for all phases. The proposed development will result in some impacts to climate through the release of GHGs. TII state that the crux of assessing significance is “not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050”. The proposed development has been designed to reduce the impact on climate where possible during operation. The proposed development has incorporated some minimal measures to reduce climate change impacts. Once mitigation measures are put in place, the effect of the proposed development in relation to GHG emissions is considered **direct, long-term, negative** and **slight**, which is overall **not significant**.

In relation to climate change vulnerability, it has been assessed that there are no significant risks to the proposed development as a result of climate change. The residual effect of climate change on the

proposed development is considered **direct, short-term, negative** and **imperceptible** with regard to the construction phase and **direct, long-term, negative** and **imperceptible** with regard to the operational phase.

#### 4.12.4 Cumulative Impact of the Proposed Assessment

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that “for GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable.”

However, by presenting the GHG impact of a project in the context of its alignment to Ireland’s trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland’s ability to meet its national carbon reduction target. Therefore, the assessment approach is considered to be inherently cumulative.

### 4.13 Cultural Heritage – Archaeological Heritage

The assessment of Cultural Heritage – Archaeological Heritage is contained within Chapter 16 of Volume II.

The Archaeological Diving Company Ltd (ADCO) carried out a Cultural Heritage Assessment to inform the proposed Greenore Port O&M Facility project, comprising desktop review and a site inspection that included an underwater assessment and walkover inspection completed on 24 and 25 August 2023, operating under licences 23D0070 and 23R0237 granted by the Department of Housing, Local Government and Heritage (DHLGH).

#### 4.13.1 Existing Environment

Ordnance Survey mapping from the early twentieth century records an active quayside and associated railway yard that was built at Greenore between 1869 and 1873. A series of known cultural heritage assets are recorded in proximity to Greenore Port, and there are three protected structures within the Greenore Port precinct. However, there are no recorded sites or features within the proposed development footprint.

Archaeological assessment for the present project included a sub-tidal and intertidal inspection across the marine development area, extending across an in-water area that measures some 407 m long by 157 m wide, and an archaeological walkover inspection across the port area.

The sub-tidal element revealed a sandy and cobble seabed surface with good penetration. Two timber braces associated with the historic breakwater were observed on the seabed. The breakwater was inspected at Low Water.

The walkover inspection recorded a series of upstanding features in addition to the three protected structures within the port area.

This report identified a total of eight additional features (ADCO 01–ADCO 08) across the port area that should be considered as retaining cultural heritage significance.

## 4.13.2 Impact Assessment

### 4.13.2.1 Demolition Phase

The proposed landside works will include the demolition of four modern structures, none of which retain cultural heritage interest: the former OpenHydro works building; part of the port's office accommodations; an ESB substation, and an unoccupied residential bungalow built before the 1970s.

### 4.13.2.2 Construction Phase

The proposed works will have impacts on the seabed (ADCO 01) by way of capital dredging and marine piling.

While the breakwater (ADCO 02) superstructure will not be impacted, repair works to the rock armour base of the breakwater may be required.

The development of Berth 3 will formalise the existing caisson arrangement at this location.

The construction of the three new buildings and the general landscaping proposals will not impact on the historic landside elements identified.

### 4.13.2.3 Operational Phase

It is not anticipated that impacts will occur during the operational phase.

### 4.13.2.4 Cumulative Impact

Three aquaculture sites, T01-026A, T01-089A and T01-044A, are located within 500m of the proposed marine dredging and pontoon construction site. The magnitude of the cumulative impact is deemed to be negligible, and the sensitivity of the receptor is considered to be high. The cumulative effect will, therefore, be of slight adverse significance, which is not significant in EIA terms.

## 4.13.3 Mitigation

### 4.13.3.1 Incorporated Design

Project design to avoid impacts on known archaeological features where possible.

### 4.13.3.2 Demolition Phase

Archaeological monitoring of the ground works associated with the demolition of the four buildings.

### 4.13.3.3 Construction Phase

An Archaeology Management Plan will be prepared to identify the protocols to ensure proper management and response to archaeological monitoring, recording and resolution that will be required in the course of the project.

Recovery of elements of ADCO 02 (Breakwater) that have fallen on to the seabed within the dredge area.

Archaeological monitoring of capital dredging works will be required, with the proviso to resolve fully any material of archaeological interest recovered at that point.

Archaeological monitoring of marine piling works may be required, with the proviso to resolve fully any material of archaeological interest recovered at that point.

Archaeological monitoring of ground and seabed works associated with the Berth 3 upgrade will be required, with the proviso to resolve fully any material of archaeological interest recovered at that point.

#### 4.13.3.4 Operational Phase

None.

#### 4.13.4 Residual Impact Assessment

It is not anticipated that there will be residual impacts on Archaeology arising from the proposed development.

#### 4.13.5 Monitoring

The surveyed area was inspected comprehensively above and below the waterline.

Much of the historic fabric of Greenore Harbour is now lost to view. This report identifies those elements that are still visible above ground in addition to the three protected structures.

Impact avoidance is the principal mitigation recommended. Where impacts are required, archaeological monitoring is the mitigation recommended. Archaeological monitoring is licensed by the DHLGH through the National Monuments Service.

### 4.14 Cultural Heritage –Built Heritage

The assessment of Cultural Heritage –Built Heritage is contained within Chapter 17 of Volume II.

7L Architects have carried out a Built Heritage Assessment to inform the proposed Greenore Port O&M Facilities project, comprising desktop research and a field study completed on 9<sup>th</sup> October 2023.

#### 4.14.1 Existing Environment

Greenore (an Ghrianfoirt) is a planned village located at the entrance to Carlingford Lough, and is an Architectural Conservation Area with numerous protected structures.

There was little development at Greenore until a lighthouse and the keeper's cottage was constructed in 1830. A group of five coastguard houses along with a boathouse were built soon afterwards along the beach to the south. In 1863, a new coastal railway was commenced that was completed by 1876. Land was reclaimed behind new quays walls upon which a - railway station; hotel; cattle pens; cranes; signal box; goods and engine sheds were erected over a short period. This port was constructed by 1867 serving ports in England and Wales and a local service to Greencastle. A purpose-built village was constructed consisting of two main streets - Euston Street consisting of terraced houses with the addition of a schoolhouse, assembly rooms and constabulary barracks; to the west side. Anglesey Terrace runs parallel to the rear (west) of Euston Street, separated by a narrow lane with more modest

houses overlooking a green. On the approach to the village, larger houses on expansive gardens were constructed for senior staff, along with a golf course.

Railway services at the port ceased in 1952, along with ferry traffic, with freight shipping slowly recovering over the following decades. Our field survey confirmed that much of the planned village has survived in a reasonable state of preservation, while the port itself has undergone extensive change with the closing of the railway and the inevitable upgrading of port facilities in the intervening decades.

#### **4.14.2 Impact Assessment**

##### **4.14.2.1 Demolition Phase**

The proposed works involve the removal/ alteration of four modern buildings, none of which retain cultural heritage interest or have statutory protection: the former OpenHydro works building; the south end of the port offices; an ESB substation, and a bungalow that was built ca. 1970 and which is now unoccupied.

##### **4.14.2.2 Construction Phase**

The construction of the three new buildings and the general landscaping proposals will not impact on the historic built heritage of Greenore.

##### **4.14.2.3 Operational Phase**

It is not anticipated that impacts will occur during the operational phase.

##### **4.14.2.4 Cumulative Impact**

The cumulative effects of these proposals are insignificant on the built heritage of Greenore.

#### **4.14.3 Mitigation**

##### **4.14.3.1 Incorporated Design**

Project design to avoid impacts on known built heritage structures and their immediate settings where possible.

Retention of surviving stone and brick wall sections associated with the engine shed and station hall that have planning approval for their demolition will retain their built heritage value to Greenore.

##### **4.14.3.2 Demolition Phase**

None proposed other than included in the construction management plan.

##### **4.14.3.3 Construction Phase**

None proposed other than included in the construction management plan.

##### **4.14.3.4 Operational Phase**

None proposed.

#### 4.14.4 Residual Impact Assessment

It is not anticipated that there will be residual impacts on Built Heritage arising from the proposed development.

#### 4.14.5 Conclusion

The proposed development at Greenore Port has been designed to minimise visual impacts on the nearby historic village of Greenore, an Architectural Conservation Area with numerous protected structures. The continued development of port activities at Greenore requires new and improved facilities over time, maintaining its industrial heritage value. The proposed development retains the surviving historic engine shed and station hall walls which otherwise have planning approval to be demolished.

#### 4.15 Description of Significant Interactions

Likely significant interactions are set out in Chapter 18 of the EIAR. In practice, many impacts have slight or subtle interactions with other disciplines. During the preparation of this EIAR each of the specialist consultants engaged with each other with respect to the likely interactions between effects predicted as a result of the proposed development. Mitigation measures to alleviate identified likely significant effects address identified interactions. This approach meets with the requirements of Part X of the Planning and Development Act 2000, as amended, and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001, as amended.

### 5 Summary of Mitigation & Monitoring Measures

A key objective of the Environmental Impact Assessment process is to identify likely significant environmental impacts at the pre-consent stage and where necessary to propose measures to mitigate or ameliorate such impacts.

This section summarises the proposed mitigation and monitoring measures set out in Chapters 4 to 17 of Volume II of this EIAR.

It is proposed that the appointed contractor will develop a site-specific Construction and Environmental Management Plan (CEMP) prior to works commencing on-site. All the mitigation and monitoring measures proposed within the individual specialists' assessments will be incorporated into the plan.

**Table 4 Incorporated Design Mitigation**

Aspect	Mitigation
Population & Human Health	<ul style="list-style-type: none"><li>▪ The proposed development complies with the Building Regulations, to safeguard users of the buildings and the health of occupants.</li><li>▪ The proposed development complies with the requirements of Part M of the Building Regulations and incorporates the principles of universal design so that the development will be readily accessible to all, regardless of age, ability, or disability.</li><li>▪ Provision of segregated pedestrian entrance and separation of vehicular traffic.</li></ul>



Aspect	Mitigation
	<ul style="list-style-type: none"> <li>▪ The inclusion of landscaping elements and a highly accessible layout of the scheme including segregated and safety improved pedestrian walkways will provide for a high quality work place for future employees and the enhancements of the public realm and design of the overall layout will improve the setting of the wider village.</li> </ul>
Landscape & Visual	<ul style="list-style-type: none"> <li>▪ The proposed landscape consists of robust planting species specifically selected to cope with the harsh coastal environment so to minimise the risk of planting failures.</li> <li>▪ The careful design and placement of building to create new elevations, features and focal points in the views available. While offset from the historic structures within the port so to not impact on their visibility.</li> <li>▪ The softening of the setting and framing of the elevations with the proposed planting mixes including trees, specimen shrubs and hedgerow to reduce the visual mass of the new building, soften and integrate the development over time from various viewpoints, as identified in the assessment, thereby minimising the visual impacts and generally enhancing the current outlook for many viewpoints.</li> <li>▪ Tree and shrub planting to help break up the carparking areas throughout the site and implementation of suitable SUD planting in the carparks.               <ul style="list-style-type: none"> <li>▪ The design of the public realm scheme at the end of Euston Street to a high standard and seamless integration of the Port end off Euston Street and surrounding streetscape within Greenore ACA.</li> <li>▪ The design has considered the movement of vehicles, cyclists and pedestrians within the site and surrounding area and improves upon the existing access to minimise disruption. Proposed pedestrian routes through the site will have strong legibility by using contrasting paving materials.</li> <li>▪ Integration of the proposed planting with all other proposed services so that these services don't affect the new planting and existing vegetations long term growth and maintenance</li> <li>▪ The site layout has been designed, for each phase, so that there is adequate levels of parking within the site lands to accommodate employees vehicles of the OMFs and those of the existing Port operations so that no parking will occur within the surrounding streets and minimise disturbance to character of the ACA.</li> </ul> </li> </ul>
Material Assets: Traffic & Transport	<ul style="list-style-type: none"> <li>▪ The proposed development access is achieved through the existing port office entrance at Euston Street which it is proposed will be modified and enhanced in the interest of increases efficiency of vehicular entry and in the interest of pedestrian safety.</li> <li>▪ Access to the new car park is provided directly from Shore Road. The location of the proposed new car park will ensure that Shore Road continues to provide an element of orbital function to Euston Street aiding in the distribution of traffic away from the centre of Greenore.</li> <li>▪ The specific attributes of the scheme design and public realm enhancements at the northern end of Euston Street contributes to achieving objectives of DMURS and includes well designed pedestrian crossing facilities along the key travel desire lines through the scheme.</li> <li>▪ The enhancements at the port office entrance and entrance to the OMF buildings was designed with careful consideration for pedestrians and efficient movement of vehicles to and from the port offices and the proposed development.</li> </ul>

Aspect	Mitigation
	<ul style="list-style-type: none"> <li>▪ The proposed works include a segregated footway which will become the future link between Shore Road and the port office and OMF buildings. Internal provision for pedestrians includes for 2.0m segregated facilities on the main access road.</li> <li>▪ High quality and slip resistant materials will be used in the construction of crossings and gradients at dropped crossings will be sufficiently shallow to allow access for users of all abilities.</li> <li>▪ Sightlines at the new car park junction on Shore Road are provided in accordance with DMURS from a maximum setback of 2.4m. Roadside features and landscaping is so positioned not to obstruct visibility for drivers approaching or emerging from the Shore Road car park junction.</li> </ul>
Material Assets: Built Services	<ul style="list-style-type: none"> <li>▪ All new infrastructure will be designed in accordance with relevant standards and Codes of Practice.</li> <li>▪ Surface water drainage systems have been designed in accordance with the Louth County Council Development Plan 2021-2027, Greater Dublin Strategic Drainage Study and CIRIA SuDS Manual 2015. This ensures that the surface water discharges are in line with sustainability standards. Specific measures include: <ul style="list-style-type: none"> <li>○ The provision of permeable paving</li> <li>○ Stormwater attenuation tank provision</li> <li>○ Rainwater harvesting</li> <li>○ Flow control devices</li> <li>○ Chemical interceptors</li> </ul> </li> <li>▪ Fuel and chemical storage areas will be double skinned and/or bunded in accordance with best practice.</li> <li>▪ Wastewater networks have been designed in accordance with current regulations and standards. Efficiencies in water usage will be considered throughout the engineering design of the development.</li> <li>▪ Buildings will be designed to achieve TGD Part L, NZEB 2002 compliance which incorporates renewable energy technologies and measures to avoid energy losses. These will have a positive effect on the electrical demand of the proposed development.</li> </ul>
Material Assets: Waste	<ul style="list-style-type: none"> <li>▪ The principles of the 'Waste Hierarchy' and 'Circular Economy' have been applied in the design. <ul style="list-style-type: none"> <li>○ 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.</li> <li>○ The circular economy principle aims to keep materials, components, and products in-use in the economy for as long as possible. In circularity, the key objective is to design consumption and production systems to create and retain value. Both principles.</li> </ul> </li> </ul>
Land & Soils	<p><u>Waste Water Drainage</u></p> <ul style="list-style-type: none"> <li>▪ A new network of foul sewers will be installed to serve the proposed development, discharging to the existing connections to the foul collection tank located within the application site. The collection tank is an Uisce Eireann asset, and they empty the chamber for off-site disposal to Dundalk Wastewater Treatment Plant (WWTP).</li> </ul> <p><u>Surface Water Drainage</u></p>

Aspect	Mitigation
	<p data-bbox="1114 206 1407 497">RECEIVED 2024</p> <ul style="list-style-type: none"> <li>▪ The surface water system proposed to service the development comprises of various drainage components including positive stormwater networks, attenuation systems and several Sustainable Drainage System (SuDS) elements. The proposed surface water drainage is designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS), Draft WSD Guidelines and CIRIA SuDS Manual, 2015. The design of the attenuation storage system has been carried out for the 1 in 100-year event with a 20% allowance for climate change.</li> <li>▪ There are two separate drainage proposals for the proposed development, one for the O&amp;M facility and a separate system for the Shore Road carpark</li> </ul> <p data-bbox="571 589 699 616"><b>O&amp;M Facility</b></p> <ul style="list-style-type: none"> <li>○ There is no discharge to ground proposed as part of the surface water drainage strategy from the O&amp;M site and the existing outfall into Carlingford Lough will be utilised. Therefore there are no effects on the land, soils and geology at the proposed development.</li> <li>○ There is existing capacity sufficient to cater for the proposed new development. The surface catchment area will increase in comparison with the existing situation, however, for the O&amp;M facility site, as the outfall is directly to sea, full attenuation for a 100 year return storm is not required. This is as per the Greater Dublin Strategic Drainage Study, Section 6.6, Vol.2. Instead, the principal issue is water quality not quantity.</li> <li>○ A bypass separator will be installed to intercept pollutants such as petroleum and oil before the Surface water outfalls to sea.</li> </ul> <p data-bbox="571 1055 783 1081"><b>Shore Road Car Park</b></p> <ul style="list-style-type: none"> <li>○ Surface water drainage will discharge by a series of filter drains into an underground stone-filled reservoir attenuation system. This system has been designed using the results of the soakaway tests in accordance with BRE 365, 2016. These results are included in the Engineering Report by CSEA included with this application.</li> <li>○ It is proposed to limit the surface water discharge to the equivalent Qbar value to 2.13 l/s/ha in compliance with the Greater Dublin Strategic Drainage Study (GDSDS), Water Services Guidelines for Planning Authorities (Draft – 2018) and CIRIA SuDS Manual, 2015. A “Hydrobrake Optimum” (downstream of the attenuation unit) vortex flow control devices to restrict the flows to the amounts calculated.</li> <li>○ A bypass interceptor will be installed to capture pollutants such as petroleum and oil and prevent their entry to the public drainage system or groundwater or groundwater where an infiltration system is utilised.</li> <li>○ Surface water will discharge to the public surface water pipe on Shore Road</li> </ul> <p data-bbox="528 1626 826 1653"><b>Storage of Hazardous Material</b></p> <ul style="list-style-type: none"> <li>▪ A fuel storage facility with a capacity of <math>\geq 200,000</math> liters will be provided in a dedicated area that will be maintained and managed by Greenore Port. This quantity of proposed fuel storage is significantly below the applicable threshold of 2,500 tonnes for petroleum products and alternative fuels detailed in Part 2 of Schedule 1 of the Control of Major Accident Hazards (COMAH) Regulations 2015.</li> <li>▪ In addition to this the tanks will be bunded or double skinned so in the event of a spill no discharge to ground will occur.</li> </ul>

Aspect	Mitigation
	<ul style="list-style-type: none"> <li>Surface water will be drained from this area into the proposed network with petrol interceptors included to ensure no hydrocarbon contamination exits the site through the surface water drainage system.</li> </ul>
Water & Hydrology	<p>Surface Water Drainage</p> <ul style="list-style-type: none"> <li>Storing surface water during high tides to limit discharge rates at the outfall to the sea.</li> <li>Tide locking the outfall during extreme high tide events, with a closure period of up to 6 hours.</li> <li>Assuming no outfall rate during the entire 6 hours of tide lock in the worst-case scenario.</li> <li>Draining roofs, yards, internal roads, and parking areas through a sealed drainage system, collected and conveyed through stormwater pipes before discharging into an underground attenuation tank.</li> <li>Draining car parks, parking bays, and access roads through permeable paving and supplementary gully system, with surface water pipework discharging into a Stormtech Attenuation system.</li> <li>Introducing stormwater manholes at appropriate spacing distances for maintenance purposes (no greater than 90m).</li> <li>Draining the satellite car park catchment area through proposed filter drains, collecting surface water runoff from impermeable vehicular aisles and discharging into a stone-filled attenuation system.</li> <li>Using stormwater drainage network pipework with diameters ranging from 225mm to 450mm, depending on flow capacity.</li> <li>Ensuring the proposed surface water network can handle up to a 30-year critical storm event plus a 20% climate change allowance without causing flooding.</li> <li>The proposed surface water drainage system designed for this development also includes a number of Sustainable Urban Drainage Systems (SuDS) measures such as permeable paving/ grasscrete, filter drains and attenuation systems. These measures will be incorporated to reduce run-off volumes and improve run-off water quality. The design of the attenuation storage system has been carried out for the 1 in 100-year event with a 20% allowance for climate change. The design of the 2 no. attenuation systems has been completed as follows: <ul style="list-style-type: none"> <li>Underground Arch-Type Attenuation Storage: The attenuation storage systems shall comprise of underground Arch-type storage units, i.e., stormtech systems or similar approved. Its final discharge destination will be Irish Sea through by-pass petrol separators.</li> <li>Underground Stone-Fill Reservoir Attenuation System: Surface water drainage from the Satellite Car Park shall discharged into an underground stone-fill reservoir designed using the results of soakaway tests in accordance with BRE 365, 2016. Its final discharge destination will be the 100mm diameter pipe along Shore Road.</li> </ul> </li> <li>The catchment at the Shore Road carpark will be connected to the public Louth County Council surface water collection on the public road. It is proposed to limit the surface water discharge from the Shore Road carpark catchment zone of the development to the equivalent <math>Q_{bar}</math> value to 2.13 l/s/ha in compliance with the Greater Dublin Strategic Drainage Study (GDSDS), Water Services Guidelines for Planning Authorities Draft (2018) and CIRIA SuDS Manual, 2015. It is proposed to use a "Hydrobrake Optimum" (downstream of each attenuation unit) vortex flow control devices to restrict the flows to the amounts calculated.</li> </ul>

Aspect	Mitigation
	<p>Foul WasteWater Drainage</p> <ul style="list-style-type: none"> <li>A new network of foul sewers will be installed to serve the proposed development, discharging to the existing collection tank. There will be no direct or indirect foul water discharge into Carlingford Lough.</li> </ul> <p>Potential Impacts on Water Framework Directive Status</p> <ul style="list-style-type: none"> <li>A fuel store with a capacity of <math>\geq 200,000</math> litres will be provided in a dedicated area that will be maintained and managed by Greenore Port. The overall volume will be stored in 1-2 bunded tanks and located in a secure area of the site to avoid accidental impact. The tanks will be fitted with overfill prevention, bund alarm and automatic shut off valves to mitigate risk of spills</li> <li>Surface water will be drained from this area into the proposed network with petrol interceptors included.</li> <li>The proposed stormwater drainage network design includes sustainable drainage systems (SuDS) these measures by design ensure the stormwater leaving the site is to be attenuated and treated within the new development site boundary to ensure suitable quality, before discharging to the Carlingford Lough</li> <li>It is proposed to separate the surface water and foul drainage networks, which will serve the proposed development, and provide independent connections to the local public surface water and foul sewer networks respectively.</li> <li>The surface water discharges from the site are indirect, and will be adequately attenuated via SuDS measures, hydro-brake (or equivalent) and oil/water separator ensure there is no long-term negative impact to the WFD water quality status of the (Carlingford Lough) and (Dundalk GWB).</li> </ul>
Biodiversity	<ul style="list-style-type: none"> <li>The design integrates enhancement measures for swifts in the form of 10 swift boxes per OMF building, for a total of 30 boxes.</li> <li>The landscape design is carefully considered to ensure that all species are capable of thriving within this coastal setting. Native species are included together with pollinators as advised by the All Ireland Pollinator Plan.</li> </ul>
Coastal Processes	None
Noise & Vibration	None
Air Quality	None
Climate	<p>Construction Phase</p> <ul style="list-style-type: none"> <li>Some excavated material, bricks, tiles and ceramics, metals and timber and will be diverted from waste processing by recycling or disposal in landfill, and will instead be reused on-site. This will reduce the associated CO<sub>2</sub> by approximately 32.6 tonnes</li> </ul>
Cultural Heritage - Archaeology	<ul style="list-style-type: none"> <li>Project design to avoid impacts on known archaeological features where possible.</li> </ul>
Cultural Heritage – Built Heritage	<ul style="list-style-type: none"> <li>Works in front of the port office building are partly within the ACA and adjacent to a Protected Structure – the watertower. Design mitigation has been included within the proposals with the sensitive redevelopment of the public realm at the end of Euston Street and the new entrance to the proposed port facilities.</li> <li>The proposed new wall to the carpark along the Shore Road will be sympathetic of the historic character of its setting.</li> </ul>

**Table 5 Demolition & Construction Mitigation**

Aspect	Mitigation
Population & Human Health	<ul style="list-style-type: none"> <li>▪ Construction and Environmental Management Plan (CEMP): The appointed contractor(s) will update the Outline CEMP submitted with the application and submit to Louth County Council prior to the commencement of development. <ul style="list-style-type: none"> <li>○ The CEMP will comply with all appropriate legal and best practice guidance for construction sites.</li> <li>○ The purpose of a CEMP is to provide a mechanism for the implementation of the various mitigation measures which are described in this EIAR and to incorporate relevant conditions attached to a grant of permission. The CEMP requires that these measures will be checked, maintained to ensure adequate environmental protection. The CEMP also requires that records will be kept and reviewed as required to by the project team and that the records will be available on site for review by the planning authority.</li> <li>○ All construction personnel will be required to understand and implement the requirements of the Contractor's CEMP and shall be required to comply with all legal requirements and best practice guidance for construction sites.</li> <li>○ All mitigation and monitoring measures included in the Summary of Mitigation and Monitoring Measures in Chapter 19 of this EIAR will be included in the CEMP and adhered to.</li> </ul> </li> <li>▪ Community Liaison Officer: The contractor will appoint a liaison officer to ensure that any issues from the local community are dealt with promptly and efficiently during construction. These details will be included in the contractor's CEMP.</li> <li>▪ Construction Working Hours, except for dredging and pile driving works, will generally be limited to the hours 0700 – 2000 Monday to Friday and 0700 – 1600 hours on Saturday. Some works have to be undertaken at low tide and their construction hours will be linked to tides (for example works associated with the pontoon construction and quay wall). <ul style="list-style-type: none"> <li>○ Pile driving works will be limited to 0800-1800 Monday to Friday and 0800 - 1600 hours on Saturday. It is not envisaged that works will take place on public holidays.</li> <li>○ Dredging, due to the nature of the activity, is undertaken on a 24 hour basis to achieve the maximum production rates within tidal envelopes. Dredging activities will occur for approximately 8-10 weeks.</li> <li>○ If works are required outside of these hours, in exceptional circumstances, the planning authority will be notified in advance</li> </ul> </li> <li>▪ Project supervisors for the construction phase (PSCS) will be appointed in accordance with the Health, Safety and Welfare at Work (Construction Regulations) 2013, and a Preliminary Health and Safety Plan will be formulated during the detailed design stage which will address health and safety issues from the design stages, through to the completion of the construction phase.</li> <li>▪ The Resource Waste Management Plan (RWMP) will be updated by the Contractor, as necessary, as per mitigation outlined in Chapter 8.</li> <li>▪ Aquaculture Protection: All suitable and appropriate mitigation measures included in Table 4 of the Risk Assessment for Shellfish Aquaculture, given below,</li> </ul>



Aspect	Mitigation
	<p>are recommended to be deployed during the dredging works and included in the Contractor(s) CEMP.</p> <p><u>Dredging: local resuspension of sediments and increased sedimentation rates on intertidal / subtidal foreshore</u></p> <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/transshipment to avoid spillage</li> <li>▪ All suitable and appropriate mitigations to be included in the Construction Environmental Management Plan</li> </ul> <p><u>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</u></p> <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/transshipment to avoid spillage</li> <li>• All suitable and appropriate mitigations to be included in the Construction Environmental Management Plan</li> </ul> <p><u>Dredging: release of nutrients, consumption of oxygen resulting in reduced oxygen saturation of the water body</u></p> <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/transshipment to avoid spillage</li> <li>• All suitable and appropriate mitigations to be included in the Construction Environmental Management Plan</li> </ul> <p><u>Dredging and installation of quay wall extension and floating pontoons: contamination/pollution of water body by hydrocarbons/liquid contaminants</u></p> <ul style="list-style-type: none"> <li>▪ Prepare protocol for the management of hydrocarbons and cement.</li> <li>▪ For cement, specifically this should detail measures to: <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> </ul> </li> </ul>



Aspect	Mitigation
	<ul style="list-style-type: none"> <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> <li>▪ For hydrocarbons, mitigations should require: <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> </li> </ul>
<b>Landscape &amp; Visual</b>	<ul style="list-style-type: none"> <li>▪ Appropriate site management measures as contained within the site's Construction and Environmental Management Report will when implemented help keep potential temporary disturbance to landscape and visual receptors to a minimum. These measures will include: the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, agreed working hours, etc.</li> <li>▪ The construction traffic route has been designed so that site traffic/deliveries will run via Shore Road to ensure minimal disturbance to residences within the core of the village during the works.</li> <li>▪ Visual impact during the construction phase will be mitigated through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish. Any temporary lighting will be directed down and away from the residences and will only be switched on only when necessary to ensure works can be safely carried out.</li> <li>▪ The retained trees along the boundaries will be protected by installation of fencing in accordance with BS5837:2012: Trees in Relation to Construction around the root protection areas (RPAs) as per the arborists Arboricultural Impact Assessment (AIA) report.</li> <li>▪ Site hoarding, where necessary, will be appropriately scaled, finished and maintained for the period of construction of each section of the works as appropriate</li> </ul>
<b>Material Assets: Traffic &amp; Transport</b>	<ul style="list-style-type: none"> <li>• A Construction Traffic Management Plan will be prepared by the appointed contractor(s), including measures to provide information to affected parties, including advising land and property owners in advance of any diversions. Local access shall be maintained at all times. In addition, it is proposed that temporary signage shall be put in place to minimise disruption and ensure all road users understand that construction works are in progress.</li> <li>• 'Construction Environmental Management Plan'(CEMP) shall include details on working hours, , construction traffic including deliveries, parking arrangements and incorporate the mitigation measures outlined here.</li> <li>• All HGV vehicle movements will be restricted to the Main Port Entrance on Shore Road.</li> </ul>

Aspect	Mitigation
<b>Material Assets: Built Services</b>	<ul style="list-style-type: none"> <li>▪ A site-specific Construction and Environmental Management Plan will be enacted by the Contractor.</li> <li>▪ Pre-construction consultation and authorisation will be achieved for all the relevant infrastructure connections.</li> <li>▪ Any works required to material assets on or around the Site will be carried out in conjunction with the relevant provider to ensure minimal disruption to the existing users.</li> <li>▪ Any works required to material assets on or around the Site will be carried out strictly in accordance with the relevant provider's Code of Practices</li> </ul>
<b>Material Assets: Waste</b>	<ul style="list-style-type: none"> <li>▪ Prior to commencement, the appointed Contractor(s) will be required to refine / update the RWMP (Appendix 8.1) in agreement with LCC and in compliance with any planning conditions, or submit an addendum to the RWMP to LCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream.</li> <li>▪ The Contractor will implement the RWMP throughout the duration of the proposed demolition phase and should treat the document as outlined in the guidance as a live document.</li> </ul> <p><u>Demolition</u></p> <ul style="list-style-type: none"> <li>▪ On-site segregation of waste materials will be carried out where practicable. The following waste types will always be segregated: <ul style="list-style-type: none"> <li>○ Glass</li> <li>○ Concrete, Bricks, Tiles, Ceramics</li> <li>○ Plasterboard</li> <li>○ Asphalts</li> <li>○ Metals and</li> <li>○ Timber</li> </ul> </li> <li>▪ Any suitable demolition materials to be re-used on-site, where possible;</li> <li>▪ All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;</li> <li>▪ Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, and oils) will be segregated and will be stored in appropriate receptacles (double-skinned, if required).</li> <li>▪ A Resource Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the demolition works;</li> <li>▪ All staff will be provided with training regarding the waste management procedures;</li> <li>▪ All waste receptacles leaving the site will be covered or enclosed.</li> <li>▪ All waste requiring off-site management will be reused, recycled, recovered or disposed of at a facility with the appropriate registration, permit or licence.</li> <li>▪ All waste leaving the site will be directed for reuse, recycling or recovery, where possible, to limit the volume of material designated for disposal.</li> <li>▪ All waste leaving the site will be recorded, and the main Contractor will maintain copies of relevant documentation.</li> </ul> <p><u>Construction</u></p> <ul style="list-style-type: none"> <li>▪ Building materials will be chosen to 'design out waste';</li> <li>▪ Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible;</li> </ul>

Aspect	Mitigation
	<p>RECEIVED 2005/2024</p> <ul style="list-style-type: none"> <li>▪ All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;</li> <li>▪ Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably banded areas, where required);</li> <li>▪ A Resource Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works;</li> <li>▪ All construction staff will be provided with training regarding the waste management procedures;</li> <li>▪ All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal;</li> <li>▪ All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities; and</li> <li>▪ All waste leaving the site will be recorded and copies of relevant documentation maintained.</li> <li>▪ The project design team have estimated that approx 2,960 m<sup>3</sup> of excavated soils and approx. 45,000m<sup>3</sup> of soft dredged material will be removed offsite. The material will be correctly classified and segregated (where necessary) to ensure that any potentially contaminated materials are identified and disposed of in an appropriate manner at a suitably licenced facility.             <ul style="list-style-type: none"> <li>○ Where excavated materials meet the definition of By-Product, they will be notified to the EPA as such, using the Article 27 process.</li> <li>○ 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 <i>Waste Classification – List of Waste &amp; Determining if Waste is Hazardous or Non-Hazardous</i> publication. Clean, inert material may be used as fill material in other construction projects or engineering fill for waste-licensed sites.</li> <li>○ 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 <i>Waste Management Act 1996</i> as amended, the <i>Waste Management (Collection Permit) Regulations 2007</i> as amended and the <i>Waste Management (Facility Permit &amp; Registration) Regulations 2007</i> as amended.</li> <li>○ Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.</li> <li>○ In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately from any non-hazardous material. It will be treated off-site at a suitably licenced facility or disposed of abroad via Transfrontier Shipment of Wastes (TFS).</li> </ul> </li> <li>▪ While it is not envisaged that bedrock will be encountered in the dredge if it is encountered, any volume would be small. A nominal value of approx. 1,000m<sup>3</sup> has been considered. If bedrock is to be crushed onsite, the appropriate mobile waste facility permit will be obtained from Louth County Council.</li> <li>▪ 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.</li> <li>▪ C&amp;D waste, which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboard, will be placed in separate skips or other receptacles.</li> </ul>

Aspect	Mitigation
	<p>Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the main contractor's waste team 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.</p> <ul style="list-style-type: none"> <li>▪ 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 or encapsulation work must be carried out per <i>S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010</i>.</li> <li>▪ 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.</li> <li>▪ 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.</li> <li>▪ 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 on site.</li> <li>▪ 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 <b>Error! Reference source not found.</b>).</li> <li>▪ All movement of waste and the use of waste contractors will be undertaken in accordance with the <i>Waste Management Acts 1996 - 2011</i>, <i>Waste Management (Collection Permit) Regulations 2007</i> as amended and <i>Waste Management (Facility Permit &amp; Registration) Regulations 2007</i> and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM will maintain a copy of all waste collection permits on-site.</li> <li>▪ 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. 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.</li> <li>▪ Building materials will be chosen to 'design out waste'.</li> <li>▪ Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc, if required.</li> <li>▪ During the construction phase the project Construction Environmental Management Plan (CEMP) will be followed in regard to implementing and managing all environmental management requirements.</li> </ul>

Aspect	Mitigation
	<ul style="list-style-type: none"> <li>○ This CEMP explains the construction techniques and methodologies which will be implemented during the construction of the proposed development.</li> <li>○ 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.</li> <li>▪ The CEMP will be implemented and adhered to by the C&amp;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</li> </ul>
Land & Soils	<p><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li>• The Outline CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works where relevant. All personnel working on the Site will be trained in the implementation of the procedures.</li> <li>▪ The Outline CEMP sets out the proposed procedures and operations to be utilised on the proposed construction site. All mitigation measures outlined here, and within the Outline CEMP will be implemented during the construction phase, as well as any additional measures required pursuant to consent conditions which may be imposed</li> <li>▪ An emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. Furthermore, it's imperative to disseminate this emergency protocol to all site personnel during the site induction process. This plan will include for events such as: <ul style="list-style-type: none"> <li>○ Pollution incidents: These may involve spillages, the malfunction of temporary structures, embankment collapse, acts of vandalism, fires, and other related events.</li> <li>○ Extreme weather occurrences: Events such as heavy rainfall, flooding, are important factors to consider due to their potential impact on the construction process.</li> </ul> </li> <li>▪ The Contractor will be required to implement emergency response procedures that align with industry best practice guidance. All personnel working on the site will be informed of the emergency measures in place.</li> </ul> <p><u>Soil Excavation, Removal and Infill</u></p> <ul style="list-style-type: none"> <li>▪ Excavated soils and stones that are in excess of the requirements for reuse within the proposed development site will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.</li> <li>▪ Excavated soft dredge arisings will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.</li> <li>▪ The effects of soil stripping and stockpiling will be mitigated through the implementation of an earthworks handling protocol by the Contractor.</li> <li>▪ Dust suppression measures (e.g. damping down during dry periods), vehicle wheel washes, road sweeping, and general housekeeping will ensure that the surrounding environment is free of nuisance dust and dirt on roads.</li> <li>▪ A suitably qualified person will carefully monitor excavation works at the location to identify and segregate any potentially contaminated soil from clean/inert soil. In the unlikely event that any potentially contaminated soils are encountered, the soil will be tested and classified as hazardous or non-hazardous in accordance with the EPA <i>Waste Classification – List of Waste &amp; Determining if Waste is Hazardous or Non-</i></li> </ul>

Aspect	Mitigation
	<p><i>Hazardous</i> publication, HazWasteOnline tool or similar approved method. The material will then need to be classified as inert, non-hazardous, stable non-reactive hazardous or hazardous in accordance with <i>EC Decision 2003/33/EC</i>. It will then be removed from the site by a suitably permitted waste contractor to an authorised waste facility.</p> <p><u>Sources of Engineering Fill and Aggregates</u></p> <ul style="list-style-type: none"> <li>▪ All imported fill and aggregate that may be required for the proposed development will be sourced from reputable suppliers. All suppliers will be vetted for: <ul style="list-style-type: none"> <li>○ Aggregate compliance certificates/declarations of conformity for the classes of material specified for the proposed development;</li> <li>○ Environmental Management status; and</li> <li>○ Regulatory and Legal Compliance status of the Company</li> </ul> </li> </ul> <p><u>Fuel and Chemical Handling</u></p> <ul style="list-style-type: none"> <li>▪ Designation of a bunded refuelling areas on the site if refuelling cannot be undertaken off site;</li> <li>▪ Provision of spill kit facilities across the site;</li> <li>▪ Where mobile fuel bowsers are used the following measures will be taken: <ul style="list-style-type: none"> <li>○ Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use.</li> <li>○ The pump or valve will be fitted with a lock and will be secured when not in use.</li> <li>○ All browsers are to carry a spill kit.</li> <li>○ Operatives must have spill response training.</li> <li>○ Drip trays will be used on any required mobile fuel units.</li> </ul> </li> <li>▪ In the case of drummed fuel or other potentially polluting substances which may be used during construction, the following measures will be adopted: <ul style="list-style-type: none"> <li>○ Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;</li> <li>○ Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;</li> <li>○ All drums to be quality approved and manufactured to a recognised standard;</li> <li>○ If drums are to be moved around the site, they will be secured and on spill pallets; and</li> <li>○ Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.</li> </ul> </li> <li>▪ All contractors will be required to implement mitigation measures discussed above.</li> <li>▪ All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed by the contractor prior to works being carried out which will include measures to prevent discharge of alkaline waste waters or contaminated storm water to the underlying subsoil. Wash-down and washout of concrete transporting vehicles will take place at a designated wash out point on site.</li> </ul> <p><u>Environmental Procedures</u></p> <ul style="list-style-type: none"> <li>▪ There will be comprehensive emergency response procedures and standard operating procedures to respond to chemical spillage of all types. All employees will be provided with such equipment, information, training and supervision as is necessary to implement the emergency response procedures and standard operating procedures.</li> </ul>



Aspect	Mitigation
Water & Hydrology	<p data-bbox="528 271 703 293"><u>Demolition Phase</u></p> <p data-bbox="528 309 584 331">None</p> <p data-bbox="528 347 719 369"><u>Construction Phase</u></p> <ul style="list-style-type: none"> <li data-bbox="528 385 1396 533">▪ The Outline CEMP will be implemented and adhered to by the construction contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager, Resource Manager and Ecological Clerk of Works where relevant. All personnel working on the Site will be trained in the implementation of the procedures.</li> <li data-bbox="528 539 1396 667">▪ The Outline CEMP sets out the proposed procedures and operations to be utilised on the proposed construction site. All mitigation measures outlined here, and within the Outline CEMP will be implemented during the construction phase, as well as any additional measures required pursuant to consent conditions which may be imposed</li> <li data-bbox="528 674 1396 1055">▪ An emergency response plan will be developed by the construction contractor. This plan will outline a well-defined procedure for effectively managing emergencies as they arise. Furthermore, it's imperative to disseminate this emergency protocol to all site personnel during the site induction process. This plan will include for events such as: <ul style="list-style-type: none"> <li data-bbox="576 853 1396 943">○ Pollution incidents: These may involve spillages, the malfunction of temporary structures, embankment collapse, acts of vandalism, fires, and other related events.</li> <li data-bbox="576 949 1396 1055">○ Extreme weather occurrences: Events such as heavy rainfall, flooding, are important factors to consider due to their potential impact on the construction process.</li> </ul> </li> <li data-bbox="528 1061 1396 1160">▪ The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the site will be informed of the emergency measures in place.</li> </ul> <p data-bbox="528 1176 751 1198"><u>Surface Water Run-Off</u></p> <ul style="list-style-type: none"> <li data-bbox="528 1214 1396 1303">▪ Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. All exposed soil surfaces will be within the main excavation site which limits the potential for any offsite impacts.</li> <li data-bbox="528 1310 1396 1518">▪ Should any discharge of construction water be required during the construction phase, discharge will be to the surface water network. Therefore there will be interaction between silt laden construction water and surface water quality combined with Pre-treatment and silt reduction measures on site and hydrocarbon interceptors. All refuelling will be carried out at adequate distances away from waterbodies from doubled skinned bowzers and spill kits will be available at all times.</li> <li data-bbox="528 1525 1396 1935">▪ Any minor ingress of groundwater and collected rainfall in the excavation will be pumped out during construction. It is estimated that the inflow rate of groundwater will be low and limited to localised perched water. It is therefore proposed that the water be discharged via the existing stormwater sewer network. The use of slit traps and an oil interceptor (if required) will be adopted if the monitoring indicates the requirements for the same with no silt or contaminated water permitted to discharge to the sewer. There shall be localised pumping of surface run-off from the excavations during and after heavy rainfall events to ensure that the excavations are kept relatively dry, however this is expected to be low due to the low permeability of the subsoils and the relatively shallow nature for excavations. Likewise, infiltration to the underlying aquifer is not anticipated (Refer to Chapter 9 (Land, Soils, Geology and Hydrogeology) for further details).</li> </ul>



Aspect	Mitigation
	<p data-bbox="1114 208 1406 501">RECEIVED 28/10/2024</p> <ul style="list-style-type: none"> <li>▪ Run-off water containing silt will be contained on-site via settlement tanks/lagoons and treated to ensure adequate silt removal. Silt reduction measures on site will include a combination of silt fencing and settlement measures (silt traps, silt sacks and settlement tanks/ponds).</li> <li>▪ The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted and/or backbucketed to reduce runoff and graded to aid in runoff collection. This will prevent any potential negative impact on the stormwater drainage and the material will be stored away from any surface water drains. Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations. Soil from works will be stored away from existing drainage features to remove any potential impact.</li> <li>▪ Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site and the suitable distance of topsoil piles from surface water drains will be maintained.</li> </ul> <p data-bbox="528 831 804 857">Fuel and Chemical Handling</p> <ul style="list-style-type: none"> <li>▪ The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or groundwater quality impacts:             <ul style="list-style-type: none"> <li>○ Designation of a bunded refuelling areas on the site;</li> <li>○ Provision of spill kit facilities across the site;</li> <li>○ Where mobile fuel bowsers are used the following measures will be taken: Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use. The pump or valve will be fitted with a lock and will be secured when not in use. All bowsers to carry a spill kit. Operatives must have spill response training. Bowsers to be double skinned.</li> </ul> </li> <li>▪ In the case of drummed fuel or other potentially polluting substances which may be used during construction, the following measures will be adopted:             <ul style="list-style-type: none"> <li>○ Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;</li> <li>○ Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;</li> <li>○ All drums to be quality approved and manufactured to a recognised standard;</li> <li>○ If drums are to be moved around the site, they will be secured and on spill pallets; and</li> <li>○ Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.</li> </ul> </li> </ul> <p data-bbox="528 1644 767 1671">Cement/Concrete Works</p> <ul style="list-style-type: none"> <li>▪ Where feasible all ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil.</li> <li>▪ No wash-down or wash-out of ready-mix concrete vehicles during the construction works will be carried out at the site within 10 meters of an existing surface water drainage point. Washouts will only be allowed to take place in designated areas with an impervious surface where all wash water is contained and removed from site by road tanker or discharged to foul sewer submit to agreement with Uisce Éireann.</li> </ul>

Aspect	Mitigation
	<p>▪ The construction contractor will be required to implement emergency response procedures, and these will be in line with industry guidance. All personnel working on the Site will be suitably trained in the implementation of the procedures.</p> <p>Soil Removal and Compaction</p> <p>▪ Excavated soil and stone surplus to requirements on-site will be taken for appropriate offsite reuse, recovery, recycling and/or disposal.</p> <p>▪ Dredge material will be taken for appropriate offsite reuse, recovery, recycling and/or disposal.</p> <p>▪ Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment. The material will be stored away from any surface water drains and surface waterbodies (Carlingford Lough). Movement of material will be minimised to reduce degradation of soil structure and generation of dust.</p> <p>▪ All excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.</p> <p>Environmental Procedures</p> <p>▪ There will be comprehensive emergency response procedures and standard operating procedures to respond to chemical spillage all types. All employees will be provided with such equipment, information, training and supervision as is necessary to implement the emergency response procedures and standard operating procedures</p>
Biodiversity	<p>Mitigation Measure No. 1</p> <p>Where feasible, the timing of the clearing of the vegetation within the 'Residential Site' will avoid the bird breeding season (March-August inclusive). Where the construction programme does not allow this seasonal restriction to be observed, a pre-clearance check of that area of the proposed development site for nests will be carried out by a suitably qualified ecologist in advance of commencing the clearance. Where it can be confirmed that no nesting birds are present, the clearance will commence. Where breeding birds are confirmed to be present, the clearance must not commence until it can be confirmed that the chicks have fledged.</p> <p>Mitigation Measure No. 2</p> <p>Prior to any works commencing the Outline Construction Environment Management Plan (OCEMP) included with this application will be reviewed and updated by the Contractor to become the Construction Environment Management Plan (CEMP). It will, <i>inter alia</i>, include all of the mitigation measures detailed in this section. The CEMP will be reviewed by a qualified ecologist to ensure it meets the requirements of this chapter and the Natura Impact Statement.</p> <p>The CEMP will include details of the following:</p> <ul style="list-style-type: none"> <li>• Details of all chemical/fuel storage areas (including location and bunding to contain run-off of spillages and leakages).</li> <li>• Details of how and where hazardous wastes such as oils, diesel and other hydrocarbon or other chemical waste are to be stored and disposed of in a suitable manner.</li> </ul>

Aspect	Mitigation
	<div data-bbox="576 259 1398 577"> <ul style="list-style-type: none"> <li>• Details of emergency plan to deal with the containment of chemical spillage, cement spillage.</li> <li>• Truck wheel wash details (including measures to avoid and treat runoff).</li> <li>• Site run-off management, including details of appropriate containment measures to be put in place at the quayside to prevent contamination of the lough.</li> <li>• A Waste Management Plan (WMP) which clearly sets out the Contractor's proposals regarding the treatment, storage and disposal of waste.</li> <li>• In addition, the CEMP will detail the relevant person with overall responsibility for the implementation for the CEMP.</li> </ul> </div> <div data-bbox="528 611 817 640"> <p>Mitigation Measure No. 3</p> </div> <div data-bbox="528 651 1398 752"> <p>Care will be taken at all times to avoid contamination of the environment with cementitious material. Such measures will be detailed in the CEMP. Specifically, this should detail measures to:</p> </div> <div data-bbox="576 763 1398 1070"> <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 an appropriate area of the site, at least 50m from the marine area, is designated for concrete WASHOUT. Further, ensure this area is away from 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 any run-off to an appropriate safe location away from marine areas.</li> <li>• Ensure proper management in the event of an accidental spill.</li> </ul> </div> <div data-bbox="528 1122 817 1151"> <p>Mitigation Measure No. 4</p> </div> <div data-bbox="528 1162 1398 1328"> <p>The assessment of impacts indicated that the accidental spillage of hydrocarbons had the potential to lead to a localised significant impact on the receiving environment. Therefore, the following mitigation will be implemented during the construction phase to avoid the possibility of accidental spillage of any hydrocarbons associated with the use of plant, machinery or inshore vessels (if used).</p> </div> <div data-bbox="528 1368 1398 1433"> <p>The proper use and storage of oils and fuels as set out below will be implemented by the appointed contractor.</p> </div> <div data-bbox="576 1444 1398 1899"> <ul style="list-style-type: none"> <li>• A designated area within the site compound will be established for the storage of plant, machinery and materials during the construction phase of the project. The site compound will be suitably located with due regard for the receiving environment and in particular the sensitive receiving waters.</li> <li>• Where feasible plant and machinery will be refuelled at a dedicated refuelling area within the site compound with appropriate spill controls in place.</li> <li>• All plant and machinery will be regularly checked for leaks.</li> <li>• Any hydrocarbons used on the project site will be contained within a bunded container or area.</li> <li>• A hydrocarbon oil boom to be available at all times onsite in the event of it needing to be deployed.</li> </ul> </div>

Aspect	Mitigation
	<div data-bbox="576 259 1398 551"> <ul style="list-style-type: none"> <li>• If required, generators to be on a hydrocarbon mat at all times. OR appropriately self binned</li> <li>• Spill kits to deal with any accidental spillage of hydrocarbons will be available at the project site.</li> <li>• The roles and responsibilities of construction and associated staff regarding the protection of the receiving environment will be clearly set out and documented.</li> </ul> </div> <div data-bbox="528 573 818 607"> <p>Mitigation Measure No. 5</p> </div> <div data-bbox="528 618 1398 719"> <p>The assessment of impacts indicated the potential for the introduction of IAS associated with plant and small vessels working in the intertidal and subtidal areas. Therefore, the following mitigation will be implemented by the developer:</p> </div> <div data-bbox="528 730 1398 864"> <p>Boats, barges and marine equipment working in the intertidal and nearshore area will be free of fouling by the use of appropriate application of antifouling paints and/or washdowns for smaller boats and plant. All visible hitchhikers will be removed from any tracked plant and equipment entering the intertidal area.</p> </div> <div data-bbox="528 887 775 920"> <p>Mitigation Measure No. 6</p> </div> <div data-bbox="528 931 1398 1200"> <p>Where feasible, any pile driving element of the marine piling works will not take place between the 20th of May and the 30th of June. Where the construction programme does not allow this seasonal restriction to be observed, a pre-construction check of the breakwater for nesting black guillemot will be carried out by a suitably qualified ecologist in advance of commencing the pile driving works. Where it can be confirmed that no nesting birds are present, the pile driving will commence. Where birds are confirmed to be present, the pile driving works must not commence until it can be confirmed that the chicks have fledged, and the site has been abandoned.</p> </div> <div data-bbox="528 1256 775 1290"> <p>Mitigation Measure No. 7</p> </div> <div data-bbox="528 1301 1398 1570"> <p>Where feasible, any rock-breaking element of the capital dredge will not take place between the 20th of May and the 30th of June. Where the construction programme does not allow this seasonal restriction to be observed, a pre-construction check of the breakwater for nesting black guillemot will be carried out by a suitably qualified ecologist in advance of commencing the rock-breaking works. Where it can be confirmed that no nesting birds are present, the rock breaking will commence. Where birds are confirmed to be present, the rock-breaking works must not commence until it can be confirmed that the chicks have fledged, and the site has been abandoned.</p> </div> <div data-bbox="528 1581 775 1615"> <p>Mitigation Measure No. 8</p> </div> <div data-bbox="528 1626 1398 1805"> <p>NPWS (2014) provides guidance to manage the risk to marine mammals from man-made sound sources in Irish waters. This document provides guidance and mitigation measures to address key potential sources of anthropogenic sound that may impact negatively on marine mammals in Irish waters. The mitigation methods should follow the guidance prescribed by the NPWS to avoid PTS. The guidance set out in NPWS (2014),</p> </div> <div data-bbox="528 1816 775 1850"> <p>Mitigation Measure No. 9</p> </div> <div data-bbox="528 1872 1398 1939"> <p>A suitably qualified, and experienced Marine Mammal observer is to supervise piling and dredging to implement NPWS (2014) Guidelines (and any amendments)</p> </div>

Aspect	Mitigation
	<p>Mitigation Measure No. 10</p> <p>A pre-demolition bat survey of structures proposed for demolition will be carried out by a suitably qualified ecologist.</p>
<b>Coastal Processes</b>	<ul style="list-style-type: none"> <li>▪ A documented Accident Prevention Procedure will be put in place before commencement.</li> <li>▪ A documented Emergency Response Procedure will be put in place before commencement.</li> </ul>
<b>Noise &amp; Vibration</b>	<p>Hours of Work</p> <ul style="list-style-type: none"> <li>▪ Construction Working Hours, except for dredging and pile driving works, will generally be limited to the hours 0700 – 2000 Monday to Friday and 0700 – 1600 hours on Saturday. Some works have to be undertaken at low tide and their construction hours will be linked to tides (for example works associated with the pontoon construction and quay wall). Pile driving works will be limited to 0800-1800 Monday to Friday and 0800 - 1600 hours on Saturday. It is not envisaged that works will take place on public holidays. Dredging, due to the nature of the activity, is undertaken on a 24 hour basis to achieve the maximum production rates within tidal envelopes Dredging activities will occur for approximately 8-10 weeks. If works are required outside of these hours, in exceptional circumstances, the planning authority will be notified in advance</li> </ul> <p>Liaison with Interested Parties</p> <ul style="list-style-type: none"> <li>▪ The contractor will appoint a liaison officer to ensure that any issues from the local community are dealt with promptly and efficiently during construction. These details will be included in the contractor's CEMP</li> </ul> <p>Selection of Quiet Plant</p> <ul style="list-style-type: none"> <li>▪ Careful consideration must be given to the noise emission levels of plant items when they are being considered for use on the site.</li> </ul> <p>Control of Noise Sources</p> <ul style="list-style-type: none"> <li>▪ If the use of low noise plant or replacing a noisy item of plant are not viable or practicable options, consideration should be given to noise control "at source". This refers to the modification of an item of plant or the application of improved sound reduction methods, often in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact.</li> <li>▪ BS5228 states that "<i>as far as reasonably practicable sources of significant noise should be enclosed</i>". In applying this guidance, constraints such as mobility, ventilation, access and safety must be taken into account. Items suitable for enclosure include pumps and generators. Demountable enclosures that could be moved around site as necessary may also be used to screen operatives using hand tools such as angle grinders.</li> <li>▪ BS5228 makes a number of recommendations in relation to "use and siting of equipment". These are relevant and hence are reproduced below. These recommendations should be implemented on the site. <ul style="list-style-type: none"> <li>○ "<i>Plant should always be used in accordance with manufacturers' instructions. Care should be taken to site equipment away from noise-sensitive areas.</i>"</li> </ul> </li> </ul>

Aspect	Mitigation
	<p><i>Where possible, loading and unloading should also be carried out away from such areas.</i></p> <ul style="list-style-type: none"> <li>○ <i>Circumstances can arise when night-time working is unavoidable. Bearing in mind the special constraints under which such work has to be carried out, steps should be taken to minimise disturbance to occupants of nearby premises.</i></li> <li>○ <i>Machines such as cranes that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. Machines should not be left running unnecessarily, as this can be noisy and waste energy.</i></li> <li>○ <i>Plant known to emit noise strongly in one direction should, when possible, be orientated so that the noise is directed away from noise-sensitive areas. Attendant operators of the plant can also benefit from this acoustical phenomenon by sheltering, when possible, in the area with reduced noise levels.</i></li> <li>○ <i>Acoustic covers to engines should be kept closed when the engines are in use and idling. The use of compressors that have effective acoustic enclosures and are designed to operate when their access panels are closed is recommended.</i></li> <li>○ <i>Materials should be lowered whenever practicable and should not be dropped. The surfaces on to which the materials are being moved could be covered by resilient material."</i></li> </ul> <ul style="list-style-type: none"> <li>▪ Also note the following outline guidance in relation to specific considerations which may be deployed as required by the contractor. <ul style="list-style-type: none"> <li>○ For mobile plant items such as cranes, dump trucks, excavators and loaders, the installation of an acoustic exhaust and/or maintaining enclosure panels closed during operation can reduce noise levels by up to 10dB. Mobile plant should be switched off when not in use and not left idling.</li> <li>○ For piling plant, noise reduction can be achieved by enclosing the driving system in an acoustic shroud. For steady continuous noise, such as that generated by diesel engines, it may be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or utilising an acoustic canopy to replace the normal engine cover.</li> <li>○ For percussive tools such as pneumatic concrete breakers, rock drills and tools a number of noise control measures include fitting muffler or sound reducing equipment to the breaker 'tool' and ensuring any leaks in the air lines are sealed. Erect localised screens around breaker or drill bit when in operation in close proximity to noise sensitive boundaries.</li> <li>○ For all materials handling ensure that materials are not dropped from excessive heights and drop chutes/dump trucks are lined with resilient materials.</li> <li>○ For compressors, generators and pumps, these can be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.</li> <li>○ Demountable enclosures can also be used to screen operatives using hand tools and may be moved around site as necessary.</li> <li>○ All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.</li> </ul> </li> </ul> <p>Screening</p> <ul style="list-style-type: none"> <li>▪ Site hoarding along the boundary between the construction site and the residential receptors that will provide a degree of barrier screening. Any screening will incorporate existing boundary walls on the site (i.e. where a suitable 2 – 2.4m</li> </ul>



Aspect	Mitigation
	<p>boundary wall exists there is no need to install hoarding in that specific location). Further benefits may be achieved through the use of additional smaller localized screens on the site itself.</p> <ul style="list-style-type: none"> <li>▪ The use of screens can be effective in reducing the noise level at a receiver location and should be employed as a complementary measure to all other forms of noise control. The effectiveness of a noise screen will depend on the height and length of the screen and its position relative to both the source and receiver. The height and length of any screen should, where practicable, be such that there is no direct line of sight between the source and the receiver.</li> <li>▪ BS 5228 states that on level sites the screen should be placed as close as possible to either the source or the receiver. The construction of the screen should be such that there are no gap or openings at joints in the screen material. In most practical situations the effectiveness of the screen is limited by the sound transmission over the barrier rather than the transmission through the barrier itself.</li> </ul>
<b>Air Quality</b>	<p>Communications</p> <ul style="list-style-type: none"> <li>▪ Develop and implement a stakeholder communications plan that includes community engagement before works commence on site. Community engagement includes explaining the nature and duration of the works to local residents and businesses.</li> <li>▪ The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details.</li> </ul> <p>Site Management</p> <ul style="list-style-type: none"> <li>▪ A feedback register will be kept on site detailing all correspondence received in connection with dust or air quality concerns, together with details of any actions carried out.</li> </ul> <p>Preparing and Maintaining the Site</p> <ul style="list-style-type: none"> <li>▪ Plan site layout so that machinery and dust causing activities are located away from sensitive receptors, as far as is possible.</li> <li>▪ Avoid site runoff of water or mud through the use of bunds.</li> <li>▪ Keep site fencing, barriers and scaffolding clean using wet methods.</li> <li>▪ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.</li> <li>▪ Cover, back bucket, seed or fence stockpiles to prevent wind whipping.</li> </ul> <p>Operating Vehicles / Machinery and Sustainable Travel</p> <ul style="list-style-type: none"> <li>▪ Ensure all vehicles switch off engines when stationary - no idling vehicles.</li> <li>▪ Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.</li> <li>▪ Impose and signpost a maximum-speed-limit of 15 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).</li> <li>▪ Produce a Traffic Management Plan to manage the sustainable delivery of goods and materials.</li> <li>▪ Implement a Traffic Management that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)</li> </ul> <p>Operations</p>



Aspect	Mitigation
	<div data-bbox="539 259 1386 674"> <ul style="list-style-type: none"> <li>Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.</li> <li>Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.</li> <li>Use enclosed chutes and conveyors and covered skips.</li> <li>Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.</li> <li>Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.</li> </ul> </div> <div data-bbox="539 685 727 719"> <p>Waste Management</p> </div> <div data-bbox="539 719 997 752"> <ul style="list-style-type: none"> <li>No bonfires or burning of waste materials.</li> </ul> </div> <div data-bbox="539 763 703 797"> <p>Demolition Phase</p> </div> <div data-bbox="539 797 1386 1144"> <ul style="list-style-type: none"> <li>Prior to demolition blocks should be soft striped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).</li> <li>Water suppression should be used, preferably with a hand-held spray. Cutting, grinding or sawing equipment fitted or used in conjunction with a suitable dust suppression technique such as water sprays/local extraction should be used.</li> <li>Drop heights from conveyors, loading shovels, hoppers and other loading equipment should be minimised, if necessary fine water sprays should be employed.</li> <li>Avoid explosive blasting, using appropriate manual or mechanical alternatives.</li> </ul> </div> <div data-bbox="539 1155 639 1189"> <p>Earthworks</p> </div> <div data-bbox="539 1189 1386 1469"> <ul style="list-style-type: none"> <li>Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.</li> <li>Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.</li> <li>Only remove the cover in small areas during work and not all at once.</li> <li>During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.</li> </ul> </div> <div data-bbox="539 1480 655 1514"> <p>Construction</p> </div> <div data-bbox="539 1514 1386 1827"> <ul style="list-style-type: none"> <li>Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are identified and put in place where possible.</li> <li>Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.</li> <li>For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.</li> </ul> </div> <div data-bbox="539 1839 616 1872"> <p>Trackout</p> </div> <div data-bbox="539 1872 1386 1964"> <ul style="list-style-type: none"> <li>A site speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles.</li> <li>Avoid dry sweeping of large areas.</li> </ul> </div>

Aspect	Mitigation
	<ul style="list-style-type: none"> <li>▪ Ensure truck bodies entering and leaving sites are covered to prevent escape of materials during transport.</li> <li>▪ Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.</li> <li>▪ Record all inspections of haul routes and any subsequent action in a site log book.</li> <li>▪ Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowzers and regularly cleaned.</li> <li>▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).</li> <li>▪ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.</li> <li>▪ Access gates to be located at least 10m from receptors where possible.</li> </ul>
Climate	<ul style="list-style-type: none"> <li>▪ Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.</li> <li>▪ Ensure all plant and machinery are well maintained and inspected regularly.</li> <li>▪ Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site.</li> <li>▪ Waste materials will be re-used on site where possible and where re-use is not possible on-site they will be sent off-site for recycling, re-use or recovery.</li> <li>▪ Sourcing materials locally where possible to reduce transport related CO<sub>2</sub> emissions.</li> <li>▪ Materials with a reduced environmental impact will be incorporated into the construction design through re-use of materials or incorporation of recycled materials in place of conventional building materials. The following materials will be considered for the construction phase: <ul style="list-style-type: none"> <li>○ Ground Granulated Blast Furnace Slag (GGBS) &amp; Pulverised Fuel Ash - used where feasible as replacements for Portland cement to increase sustainability and carbon footprint of civil and structural works; and</li> <li>○ Steel - the carbon emissions emitted during the production of virgin steel can be higher than some other structural materials on a tonne by tonne basis, and therefore, recycled steel will be used where possible. Additionally, where possible the steel reinforcement used will be supplied directly from stocks within the port or on backloads from the reinforcement providers for the port development, thereby reducing CO<sub>2</sub> emissions associated with its transportation.</li> </ul> </li> </ul>
Cultural Heritage Archaeology	<ul style="list-style-type: none"> <li>▪ An Archaeologist experienced in maritime archaeology will be retained by the developer for the duration of the relevant works i.e. all terrestrial, inter-tidal/foreshore and seabed disturbances associated with the development.</li> <li>▪ An Archaeology Management Plan will be prepared by the archaeologist to prepare the protocols that ensure proper management and response to archaeological monitoring, recording and resolution that will be required in the course of the project.</li> <li>▪ Archaeological monitoring will be carried out by suitably qualified and experienced maritime archaeological personnel licensed by the DHLGH. Archaeological monitoring is conducted during all terrestrial, inter-tidal/foreshore and seabed disturbances associated with the development. The monitoring will be undertaken in a safe working environment that will facilitate archaeological observation and the retrieval of objects that may be observed and that require consideration during the course of the works. The monitoring will include a finds retrieval strategy that is in compliance with the requirements of the National Museum of Ireland.</li> </ul>

Aspect	Mitigation
	<ul style="list-style-type: none"> <li>Archaeological licences for monitoring and site investigations of terrestrial and nearshore environments will be acquired from the Department of Housing, Local Government and Heritage (DHLGH), as necessary.</li> <li>In the event of archaeologically significant features or material being uncovered during the construction phase, machine work will cease in the immediate area to allow the archaeologist/s to inspect any such material. Once the presence of archaeologically significant material is established, full archaeological recording of such material will be recommended. If it is not possible for the construction works to avoid the material, full excavation will be recommended. The extent and duration of excavation will be a matter for discussion between the client and the licensing authorities.</li> <li>Where any archaeologically significant/potential material is identified in the course of the seabed disturbance activities, these works will stop pending a dive inspection by an archaeological dive team. The dive team would deal with any rescue excavation required. The dive team and all in-water work will conform to the Port's safety protocols for Diving at Work</li> <li>Secure wet storage facilities will be provided on site to facilitate the temporary storage of artefacts that may be recorded during the course of the site work.</li> <li>Buoying/fencing of any such areas of discovery will be necessary if discovered during excavation.</li> <li>Machinery traffic during construction will be restricted to avoid any identified archaeological site/s and their environs.</li> <li>Spoil will not be dumped on any of the selected sites or their environs.</li> <li><u>All site work</u> will be conducted in strict compliance and accord with STATUTORY INSTRUMENTS: S.I. No. 299 of 2007: Safety, Health and Welfare at Work (General Application) Regulations, 2007; and STATUTORY INSTRUMENTS: S.I. No. 254 of 2018 as amended by S.I. No. 180 of 2019, HSA Safety, Health and Welfare at Work (Diving) Regulations, 2018-2019, where required.</li> <li>It is a condition of archaeological licensing that a detailed project report is lodged with the DHLGH within 12 months of completion of site works. The reports will be particular to each licence granted. The reports should be to publication standard and should include a full account, suitably illustrated, of all archaeological features, finds and stratigraphy, along with a discussion and specialist reports. Artefacts recovered during the works need to meet the requirements of the National Museum of Ireland in terms of recording, conservation and storage</li> <li>Dredging in the vicinity of the breakwater to ensure that the dredging does not undermine the base of the breakwater and avoid impacts to superstructure.</li> </ul>
Cultural Heritage – Built Heritage	None

**Table 6 Operational Phase Mitigation Measures**

Aspect	Mitigation
Population & Human Health	None
Landscape & Visual	Lighting

Aspect	Mitigation
	<ul style="list-style-type: none"> <li>▪ Lighting has been designed to minimise the potential for light spillage into the surrounding area through the use of suitable directional lighting centred to fall within the site.</li> <li>▪ The lighting will be only on as required to provide safe access through the site during operations and for security cover of the site.</li> </ul> <p>Maintenance</p> <ul style="list-style-type: none"> <li>▪ The landscape scheme will be implemented and maintained in accordance with the proposed landscape plans and specifications.</li> </ul>
<b>Material Assets: Traffic &amp; Transport</b>	<ul style="list-style-type: none"> <li>▪ The Occupants will prepare a Modal Management Plan and encourage sustainable travel to work</li> </ul>
<b>Material Assets: Built Services</b>	<ul style="list-style-type: none"> <li>▪ SuDS features will be maintained appropriately throughout the operational phase of the development by the relevant management body.</li> <li>▪ Interceptors &amp; COSHH stores will be maintained during the Operational phase of the development by the relevant management body.</li> <li>▪ NZEB technologies employed in the development will continue to be maintained throughout the operational phase of the development by the relevant management body.</li> </ul>
<b>Material Assets: Waste</b>	<ul style="list-style-type: none"> <li>▪ All waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins, skips or other suitable receptacles in a designated, easily accessible areas of the site. <ul style="list-style-type: none"> <li>○ The Operator(s) / Facilities Manager of the Site during the operational phase will be responsible for ensuring – allocating personnel and resources, as needed – for the authoring and implementation of an Operational Waste Management Strategy, ensuring a high level of recycling, reuse and recovery at the site of the proposed development.</li> <li>○ The Operator / Facilities Manager will regularly audit the onsite waste storage facilities and infrastructure, and maintain a full record of waste documentation for all waste movements from the site.</li> </ul> </li> <li>▪ The Operator will ensure on-Site segregation of all waste materials into appropriate categories, including (but not limited to): <ul style="list-style-type: none"> <li>○ Organic waste;</li> <li>○ Dry Mixed Recyclables;</li> <li>○ Mixed Non-Recyclable Waste;</li> <li>○ Glass;</li> <li>○ Waste Oil;</li> <li>○ Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment;</li> <li>○ Batteries (non-hazardous and hazardous);</li> <li>○ Light bulbs;</li> <li>○ Cleaning chemicals (pesticides, paints, adhesives, resins, detergents, etc.); and</li> <li>○ Bulky Items</li> </ul> </li> <li>▪ The Operator will ensure that all waste materials will be stored in colour coded bins or other suitable receptacles in designated, easily accessible locations. Bins will be clearly identified with the approved waste type to ensure there is no cross contamination of waste materials;</li> <li>▪ The Operator will ensure that all waste collected from the site of the proposed development will be reused, recycled or recovered, where possible, with the</li> </ul>

Aspect	Mitigation
	<p>exception of those waste streams where appropriate facilities are currently not available; and</p> <ul style="list-style-type: none"> <li>The Operator will ensure that all waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities.</li> </ul>
Land & Soils	None
Water & Hydrology	None
Biodiversity	<p>Mitigation Measure No. 11</p> <p>The assessment of impacts indicated that the accidental spillage of hydrocarbons from smaller vessels using the pontoon had the potential to lead to a localised impact on the receiving environment. Therefore, the following mitigation will be implemented during the operational phase of the project to avoid the possibility of accidental spillage of any hydrocarbons:</p> <ul style="list-style-type: none"> <li>Refuelling of vessels via decanting from containers will not be permitted at the pontoon or within the port area.</li> <li>Bilges and/or ballast water (if relevant) will not be emptied at the pontoon.</li> <li>Detergent will not be used to clear up small spills of hydrocarbons. Oil absorbent cloths will be used instead.</li> <li>Greenore Port will maintain a kit of oil absorbent cloths and small booms to deal with accidental spillages.</li> <li>Oil absorbent collars will be fitted around the fuel nozzle to catch any drips or overflow.</li> <li>Clear signage indicting refuelling protocols will be displayed at the pontoon.</li> </ul> <p>Mitigation Measure No. 12</p> <p>The assessment of impacts indicated the potential for the introduction of IAS through small boats using the marina. Therefore, the following mitigation will be implemented by the developer:</p> <ul style="list-style-type: none"> <li>Recreational vessels will not be permitted to use the pontoon.</li> <li>Ballast water (if relevant) will not be discharged within the port area.</li> <li>Regular inspections of the hulls of visiting vessels for obvious IAS will be carried out by the operators.</li> <li>Clear signage indicating biosecurity protocols will be displayed at the pontoon.</li> <li>Staff will be trained in the identification of obvious IAS.</li> <li>Fouled vessels should not be allowed to enter the pontoon area.</li> <li>Any IAS recorded will be reported to the National Biodiversity Data Centre.</li> </ul> <p>Mitigation Measure No. 13</p> <p>Outside of Carlingford Lough, disturbance to marine mammals during operation may occur as vessel traffic will increase. The new quay wall and pontoons will provide berths for up to 11 CTV which will access the North Irish Sea from Greenore. These vessels will be required to use existing channels on the approach to and from the port. Each vessel pilot and captain is responsible to act accordingly and slow speeds to match environmental conditions and restrict any risk of wake. Once clear of the Lough vessels will reach operational speed, which could cause disturbance and a collision risk to marine</p>

Aspect	Mitigation
	mammals. In accordance with Maritime Notice 15, a speed limit of 7 knots is to be adhered to when encountering areas of mammal populations. These routes have not yet been established and disturbance and displacement will need to be considered by each ORE project through the environmental assessment undertaken for those projects.
Coastal Processes	None
Noise & Vibration	<ul style="list-style-type: none"> <li>As a general mitigation, As part of the detailed design of the development, Selection of quiet plant items and, where necessary, appropriately selected remedial measures (e.g. enclosures, silencers etc.) will be specified in order that the adopted plant noise criteria is achieved at the façades of noise sensitive properties.</li> </ul>
Air Quality	None
Climate	<ul style="list-style-type: none"> <li>Achieve air permeability rate of 3 m<sup>3</sup>/m<sup>2</sup>/hr @ 50Pa;</li> <li>Ensure every effort is made to reduce the risk of thermal bridging by upgrading the façade to ensure continuity of insulation. This is to limit local thermal bridging as much as practically possible where an existing construction element to be retained shows risk of thermal bridging;</li> <li>Building fabric U-Value calculations will be completed to at least meet the requirements of TGD Part L in relation to thermal performance;</li> <li>Central ventilation systems with heat recovery will be used to retain as much heat as possible. Amenities will be designed for mechanical ventilation with occupancy sensing to minimize the time for overrun;</li> <li>The space heating and domestic hot water system will likely be provided by a central heat pumps system with optional back up/tie-in to future district heating system. The final system will be selected based on operating cost and efficiency mandated by TGD Part L. it is likely that VRF Air condition systems will be utilised to meet the space heating demand and NZEB requirements;</li> <li>The following NZEB technologies will be considered for this development: <ul style="list-style-type: none"> <li>Centralized air to water heat pumps</li> <li>Photovoltaic system for on-site electricity use</li> <li>District Heating</li> <li>Combined heat and power (CHP) for thermal and electricity generation</li> </ul> </li> <li>The electrical design will require that all lighting be LED with occupancy sensing where required.</li> </ul>
Cultural Heritage - Archaeology	None
Cultural Heritage – Built Heritage	None