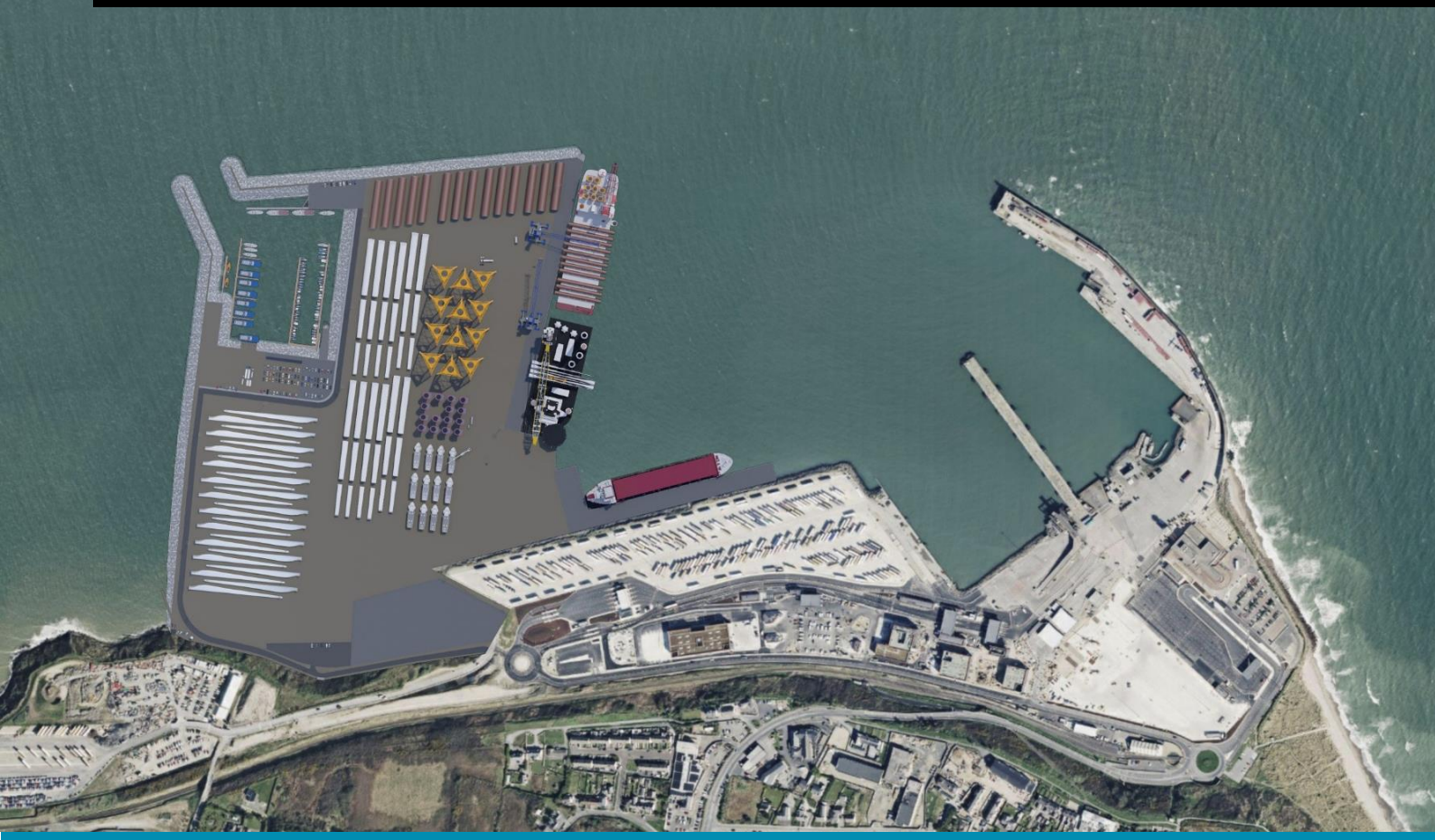
Iarnród Éireann
Irish Rail

Rosslare ORE Hub

Water Framework Directive Compliance Assessment

Part 4



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LIST OF ABBREVIATIONS

BQE	Biological Quality Elements
CD	Chartered Datum
CEMP	Construction Environmental Management Plan
CIRIA	Construction Industry Research and Information Association
CSO	Combined Sewer Overflow
CTV	Crew Transfer Vessels
CWB	Coastal Water Body
DEFRA	Department for Environment, Food and Rural Affairs
DWW	Domestic Waste Water
EC	European Commission
EIAR	Environmental Impact Assessment Report
EIP	European Innovation Partnership
ELV	Emission Limit Values
EPA	Environmental Protection Agency
EQR	Ecological Quality Ratio
EQS	Environmental Quality Standards
GDG	Gavin & Doherty Geosolutions Ltd
GEP	Good Ecological Potential
GSI	Geological Survey Ireland
GSI	Geological Survey Ireland
GWB	Groundwater Body
HA	Hydrometric Area
HMWB	Heavily Modified Water Body
IEL	Industrial Emissions Licensing
IEMA	Institute of Environmental Management and Assessment
IFI	Inland Fisheries Ireland
IPC	Integrated Pollution Control
IRCG	Irish Coast Guards
LAWPRO	Local Authority Water Programme
LoLo	Load on/Load Off
LPS	Local Port Services
mCD	metres Chart Datum
NAP	Nitrates Action Programme
NHA	Natural Heritage Areas
NPWS	National Parks and Wildlife Services
NWRM	Natural Water Retention Measures
O&M	Operations and Maintenance
oCEMP	Outline Construction Environmental Management Plan
ORE	Offshore Renewable Energy
OSRP	Oil Spill Response Plan
pNHA	Proposed Natural Heritage Areas
RAMS	Risk Assessment Method Statement

RBMP	River Basin Management Plan
RBMP	River Basin Management Plan
RNLI	Royal National Lifeboat Institution
RoPAX	Roll on/Roll off passenger
RoRo	Roll on/Roll off
RWB	River Water Body
SOPEP	Shipboard Marine Pollution Emergency Plan
SPR	Source-Pathway-Receptor
TSHD	Trailing Suction Hopper Dredger
TTS	Temporary Threshold Shifts
TWB	Transitional Water Body
UWW	Urban Waste Water
WFD	Water Framework Directive
WWTP	Wastewater Treatment Plant
ZoI	Zone of Influence

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1 INTRODUCTION

1.1 BACKGROUND

The Water Framework Directive (WFD) aims to preserve 'high status' water bodies, prevent deterioration, and achieve 'good status' for all waters by the end of each River Basin Management Plan, unless a water body is specifically subjected to an extended deadline under Article 4 (7).

To reach good overall status, the water body must have both good 'ecological' and good 'chemical' status.

In the third River Basin Management Cycle, the Wexford Harbour coastal water body (CWB) is part of an Area for Action with a restoration objective, led by the Local Authority Water Programme (LAWPRO), and encapsulates the upstream Milltown_Rosslare_010 river water body (RWB), which drains into the CWB.

Environmental Quality Standards (EQSs) for classifying surface water status were established in the European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009), as amended (one of the sets of Regulations that transpose the WFD into Irish Law). These regulations set standards for biological quality elements, physico-chemical conditions supporting biological elements (including general conditions and specific pollutants), priority substances and priority hazardous substances.

The ecological status is established according to the relevant biological, hydromorphological, and general EQSs using the one-out-all-out method, taking only the lowest grading from all the categories to represent the water body's ecological status. Similarly, chemical status uses the same method for establishing status when examining EQSs for priority substances and priority hazardous substances. In addition to achieving good ecological and chemical status, a water body must achieve compliance with standards and objectives specified for protected areas, which include areas designated by the Bathing Water Directive; the Urban Waste Water Treatment Directive; the Shellfish Waters Directive; the Habitats Directive and the Birds Directive. Water bodies that are compliant with WFD standards, but that contain protected areas that are non-compliant with protected area standards are downgraded to 'less than good' status.

The proposed works at Rosslare Europort (hereinafter referred to as 'The Site') to construct and operate the new Offshore Renewable Energy (ORE) Hub (hereinafter referred to as the 'ORE Hub' or the 'Proposed Development') are assessed in this report with respect to the requirements of the WFD. The objective of this assessment is to identify whether the development of the ORE Hub at Rosslare Europort will have a significant negative impact on the status of water bodies that are hydrologically linked to the Proposed Development. The objective of the assessment is to conclude, after considering mitigation measures, whether the Proposed Development will result in either:

- A deterioration of the status of the water bodies; or
- Prevention of water bodies from achievement of WFD status objectives.

This WFD Compliance Assessment should be read in conjunction with Chapter 9 - Water Quality and Flood Risk of the EIAR and the Screening for Appropriate Assessment and Natura Impact Statement which accompany this planning application.

1.2 STUDY AREA

For the purposes of WFD monitoring and assessment, all groundwater, rivers, lakes, coastal interbasins, estuaries, and coastal waters (within one nautical mile of the coast), have been divided into management units called 'water bodies'. The ecological and chemical status of these water bodies must be reported to the European Commission (EC). Surface water bodies are grouped into sub-catchments for the purposes of water management planning, of which the Republic of Ireland has 583. These are then further grouped into catchment management units, of which there are 46 based on the hydrometric areas used by public authorities.

With regards to this assessment, those water bodies that are within, intersect with or which are potentially hydrologically linked to the onshore or marine elements of the Proposed Development have been identified and are considered as relevant water bodies for this WFD assessment.

As illustrated in Figure 1.1, the Proposed Development, including the area to be dredged for land reclamation material, is located in the coastal waters adjacent to Rosslare Harbour village.

The Proposed Development is approximately 550m northeast of the Milltown Rosslare_010 River Sub Basin. This WFD River Water body flows north-northwest by Rosslare Strand and discharges into Wexford Harbour. The landward component of the Milltown Rosslare_010 River Sub Basin falls within the Slaney & Wexford Harbour WFD Catchment (ID 12), then is further grouped into the Forth Commons WFD Subcatchment (Code 12_5).

The Proposed Development has potential to interact with the South Slob Channel Transitional Water Body (TWB), located approximately 5.8km northwest and downstream of the Milltown Rosslare_010 stream.

There are three WFD coastal water bodies within the Zone of Influence (ZoI). The Proposed Development overlaps with the Southwestern Irish Sea CWB (HAs 11:12) and the Rosslare Harbour CWB. Wexford Harbour CWB is located 4.7km northwest and downstream via the Milltown Rosslare_010 stream and South Slob Channel water bodies.

The Proposed Development lies within the Bridgetown groundwater body (GWB).

As detailed in Chapter 7 - Soils, Geology, Hydrogeology and Contamination of the EIAR, which accompanies this planning application, due to the nature and location of the Proposed Development in a coastal location, no likely significant water quality effects on groundwater are expected and these have therefore not been assessed further in this assessment.

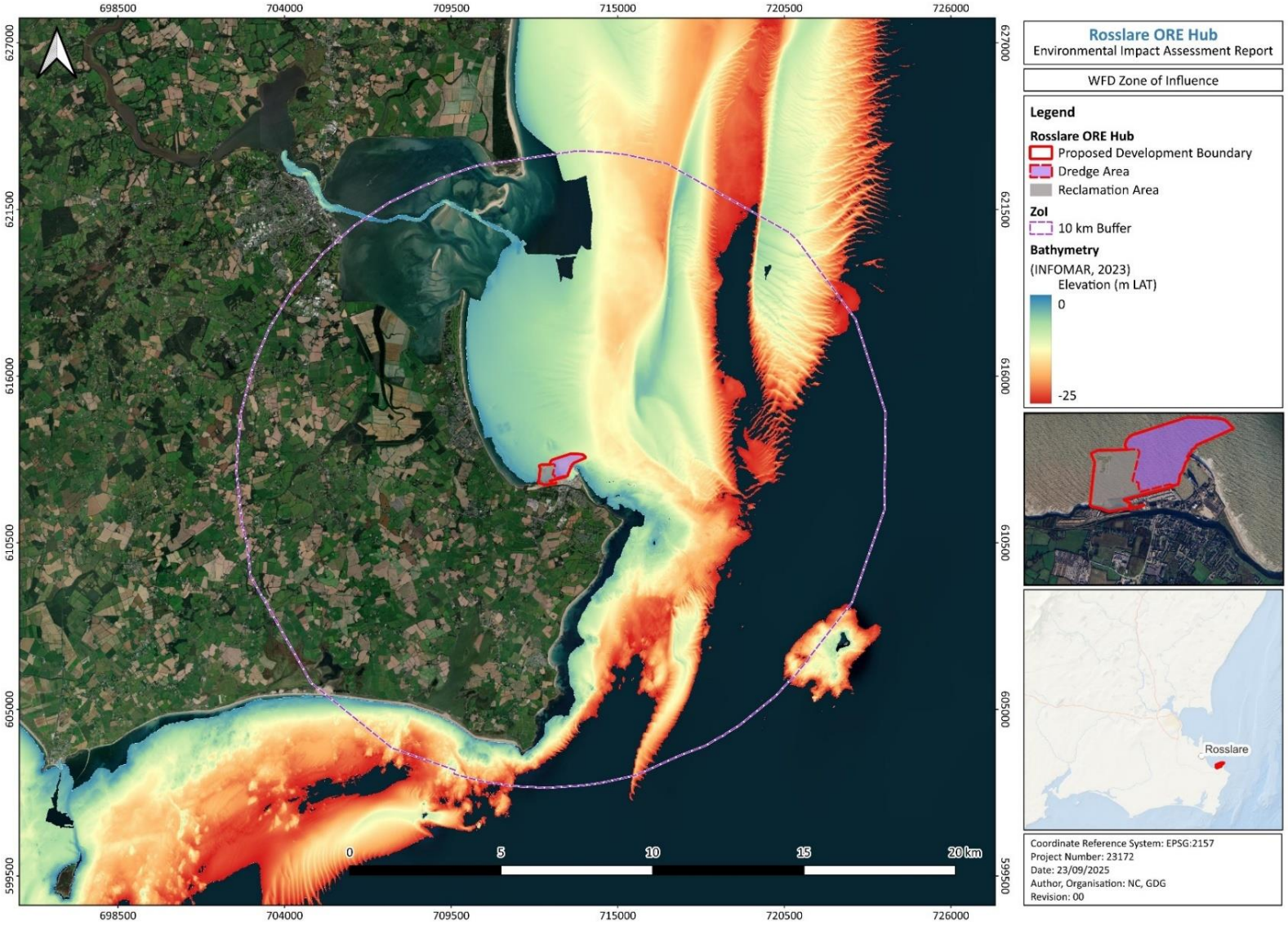

Figure 1.1: WFD Compliance Assessment Study Area

1.3 DATA SOURCES

A desktop review of relevant information has been undertaken to ascertain baseline conditions for WFD water bodies and their hydrological setting. Data was compiled from publicly available datasets. The findings are presented throughout this assessment, which comprised review of the following sources of information:

- Environmental Protection Agency (EPA) Online mapping (https://gis.epa.ie/EPAMaps/);
- EPA Consented abstractions, discharges and licences (www.epa.ie);
- EPA Catchments - Water quality and WFD surface water status (https://www.catchments.ie/);
- EPA River Quality and Hydrometric Data (www.epa.ie);
- EPA - Monitoring & Assessment: Freshwater & Marine Publications (www.epa.ie);
- Geological Survey Ireland (GSI) spatial resources mapping (https://dcenr.maps.arcgis.com);
- Irish Soil Information System National Soils Map (https://gis.epa.ie);
- Met Éireann Meteorological Databases (www.met.ie);
- National Parks and Wildlife Services (NPWS) Public Map Viewer (https://www.npws.ie);
- Water Framework Directive WFD Map Viewer (http://www.wfdireland.ie/maps.html);
- Department of Environment, Community and Local Government map viewer (www.myplan.ie);
- Bathing Water Areas (https://www.beaches.ie/);
- River Basin Management Plan (RBMP) 2022 - 2027 (www.gov.ie);
- Inland Fisheries Ireland (IFI) survey and water quality information(www.fisheriesireland.ie);
- Marine Institute – Data Centre and Publications (www.marine.ie); and,
- Tailte Éireann – Irish Townland and Historical Map Viewer (https://storymaps.arcgis.com/):
    - 6” First Edition Black; and
    - 25” First Edition (Colour).

1.4 STATEMENT OF COMPETENCE

Gavin & Doherty Geosolutions Ltd (GDG) is a specialist engineering consultancy with a foundation in geoscience, environmental services and geotechnical engineering. The company was founded in 2011 and is committed to supporting projects which contribute to the global sustainability agenda, such as enhancing infrastructure, supporting onshore and offshore wind farm developments and general civil infrastructure design.

The members of the GDG team involved in this WFD compliance assessment include:

- Callum McKenzie, a graduate environmental consultant engineer (BEng, MSc), with over a years’ experience in the industry prior to joining GDG. His early experience was surrounding the

renewable industry and involved environmental auditing of sites, which along with his MSc in Environmental Engineering gives him a good base of relevant expertise;

- Alasdair Pilmer, Senior Hydrogeologist at GDG and a Chartered Hydrogeologist (BSc, MSc, PGeo, EurGeol) with the Institute of Geologists of Ireland. He has six years of post-graduate experience working in the environmental, civil engineering and renewables sectors. Alasdair has worked on multiple onshore and offshore wind fam projects in the UK and Ireland including Yellow River Wind Farm, Cushaling Wind Farm, Setanta Wind Park and Codling Wind Park; and
- Roy Harrison, a Chartered Geologist and Member of the Institution of Environmental Sciences with over 20 years' experience working in the sector, and has led the geoenvironmental EIAR aspects of multiple large-scale developments in wind farm projects (e.g. Middle Muir Wind Farm, Kype Muir Wind Farm, Kype Muir Extension Wind Farm), large-scale transportation projects (e.g. Clyde Waterfront, Renfrew Riverside and Glasgow Airport Investment Area Infrastructure Development Projects, Cross Tay Link Road, A96 Hardmuir to Fochabers) and urban redevelopments (e.g. Dublin Street north, Monaghan).

2 LEGISLATION AND GUIDANCE

2.1 LEGISLATION

2.1.1 WATER FRAMEWORK DIRECTIVE

The WFD (Council Directive 2000/60/EC establishing a framework for community action in the field of water policy) was adopted by the EC in December 2000. The WFD requires that all European Union Member States prevent deterioration and protect, and enhance, and restore all bodies of water. Member States must ensure that schemes do not adversely impact upon the status of aquatic ecosystems, and that they must address historical modifications that are already impacting a water body.

The WFD was transposed into Irish law through the European Communities (Water Policy) Regulations 2003 (S.I. 722/2003) (as amended) in respect of the duties on all public authorities to exercise their functions in a manner consistent with achieving the objectives of the WFD. European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. 272/2009) (as amended) give further effect to the WFD in Ireland. Article 5 provides that authorities must not undertake their functions in a manner that knowingly causes or allows deterioration in the status of the water body.

The WFD is given general effect in planning legislation in Section 1A of the Planning and Development Act 2000 (S.I. 30/2000), as amended; and specifically, through amendments made in 2010, which sought to improve how water management and the planning system are integrated.

2.1.1.1 PROJECT DEVELOPMENT COMPLIANCE WITH WFD

Member States must meet the conditions of the WFD unless they meet the criteria laid out in Article 4 (7) of the Directive[1]. The Water Policy Regulations require the assessment of impacts of a project on WFD water bodies, as proposals for plans or new developments have the potential to prevent compliance with the WFD objectives (i.e., by causing a deterioration of the status of a water body and / or preventing future attainment of good surface water status/potential and good groundwater status where not already achieved). Development proposals within, or that could affect the water environment, must demonstrate that they will not cause a deterioration of the status of water bodies in their Zone of Influence (ZoI), or that they will not inhibit their future achievement of 'good' status. If a development proposal will not compromise the achievement of WFD objectives, no further assessment will be required. Where the potential to compromise the achievement of WFD objectives exists, the development proposal will need to undertake a WFD Assessment to inform decision making by the planning authority.

1. [1] All practicable steps are taken to mitigate adverse impact on the status of the body of water.
2. Reasons for modifications/alterations are specifically set out and explained in the RBMP.
3. Reasons for modifications/alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives are outweighed by the benefits of new modifications or alterations to human health, maintenance of safety, or to sustainable development.
4. The beneficial objectives served by those modifications or alterations cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

Proactive design measures to avoid and mitigate impacts can be used to reduce the scope and extent of the WFD Assessment necessary in an application.

2.2 GUIDANCE

The following guidance documents have been considered in undertaking this assessment.

CIRIA (2001). Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors. Construction Industry Research and Information Association. Available at: https://www.ciria.org/

Department for Environment, Food & Rural Affairs (2021). Safe storage of drums and intermediate bulk containers (IBCs): GPP 26, Version 1.2 June 2021. Available at: www.gov.uk/

Department for Environment, Food & Rural Affairs (2018). Works and maintenance in or near water: GPP 5, Version 1.2 February 2018. Available at: www.gov.uk/

Department for Environment, Food & Rural Affairs (2017). Above ground oil storage tanks: GPP 2, January 2017. Available at: www.gov.uk/

Department for Environment, Food & Rural Affairs (2011). The safe operation of refuelling facilities: GPP 7, July 2011. Available at: www.gov.uk/

Environmental Protection Agency (2022). Guidelines on the information to be contained in Environmental Impacts Assessment Reports. Environmental Protection Agency. Available at: www.epa.ie/

European Commission (2019) Steps for defining and assessing ecological potential for improving comparability of Heavily Modified Water Bodies, Common Implementation Strategy for the Water Framework Directive (2000/60/EC), EU Water Directors. Available at: EC2019circabceuropa

HM Government (2016). Pollution prevention for businesses, Department for Environment, Food & Rural Affairs. Available at: www.gov.uk/

IEMA (2016). Environmental Impact Assessment Guide to: Delivering Quality Development. Institute of Environmental Management and Assessment Available at: https://www.iema.net/download-document/328273

Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters. Available at: https://www.fisheriesireland.ie

National Roads Authority (2008). Environmental Impact Assessment of National Road Schemes – A Practical Guide, Revision 1, 20th November 2008. Available at: www.tii.ie

Planning Inspectorate (UK), (2017). Planning Inspectorate. Advice Note 18: The Water Framework Directive. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-the-water-framework-directive

2.2.1 WATER BODY CLASSIFICATION

The WFD describes the specific biological and chemical water quality elements that are used to assess the ecological and chemical status of a water body:

- Biological elements include, but are not limited to, presence and quantity of fish, invertebrates and macrophytes; and
- Chemical elements include, but are not limited to, concentrations of heavy metals, pesticides and nutrients.

Water body classification indicates where the environmental quality is good or may need improvement, and what may need to be improved. Status classifications are used long-term to plan improvements and monitor the effectiveness of a programme of measures in place. Two status classifications are commonly reported against: chemical and ecological status.

Chemical status is assessed from compliance with environmental standards for priority substances and/or priority hazardous substances. These are known as 'Annex X' substances as this is where they were originally listed in the WFD, which has since been superseded by the Environmental Quality Standards Directive (2008/105/EC). Chemical quality status is recorded as 'good' or 'fail' and is determined using a one-out-all-out approach, meaning the worst scoring chemical is all that counts.

Ecological status classifications can be composed of up to four separate assessments:

- Assessment of status indicated by a biological quality element such as fish, invertebrates or algae (invasive species are assessed separately);
- Assessment of compliance with environmental standards for supporting physico-chemical conditions, such as dissolved oxygen, phosphorous or ammonia;
- Assessment of compliance with environmental standards for concentrations of specific pollutants such as zinc, cypermethrin or arsenic (known as 'Annex VIII' substances); and
- For determining high status only: assessment to ensure that hydromorphology is largely undisturbed.

Ecological status can be classified as high, good, moderate, poor or bad. 'High' represents largely undisturbed conditions. The grades below this represent increasing deviation from natural or reference conditions. This deviation must be expressed as an ecological quality ratio (EQR) which ranges from zero (bad status) to one (high status). As with chemical status, ecological status is scored using a one-out-all-out approach in which the lowest scoring component represents the whole group.

Biological status is a sub-set of ecological status where the results of the biological quality elements are assessed. The one-out-all-out approach is utilised.

Overall status classification is a composite measure that looks at both ecological and chemical status. A water body must have at least good/pass in both categories to score 'good' overall.

3 WFD ASSESSMENT METHODOLOGY

There is currently no prepared guidance on undertaking a WFD assessment specifically for Irish Planning Authorities. As such, this assessment follows the UK Planning Inspectorate Guidance Note 18: The Water Framework Directive (Planning Inspectorate, 2017). This guidance recommends the following four stages are included:

- **Stage 1 Screening** – High level review to exclude any activities that do not need to go through the scoping or impact assessment stages.
- **Stage 2 Scoping** – Methodical identification of potential risks associated with a development proposal on the relevant water bodies and their water quality elements.
- **Stage 3 Impact Assessment** – A detailed assessment of water bodies, their quality elements and activities carried forward from the scoping stage.
- **Stage 4 Justification or Exemption** – Rigorous assessment of the appropriateness, or otherwise, of the Project being considered despite failure to comply with the WFD, as laid down in Article 4 (7).

These key steps are summarised below in Table 3.1.

Table 3.1: Key steps in impact assessment process for WFD compliance

Stage	Guidance
Screening	Screening is required to determine whether the Project would mandate a detailed consideration of WFD objectives. When a development is screened to require water environment factor evaluation in an EIAR, then it would automatically screen in for WFD assessment and a WFD Compliance report should be prepared by a suitably qualified professional and submitted with the application.
Scoping	WFD Scoping involves: • An initial assessment to identify the risks from the proposed development to specific receptors within the ZoI based on the hydrologically linked water bodies and their water quality elements; and • Identifying which, if any, water bodies require a more detailed impact assessment. This requires that the types of impact are identified, the timescale of s effects, and which phase of the Project lifecycle they relate to (e.g., construction and operation)
Impact Assessment & Reporting	Development proposals which have screened in for detailed consideration of WFD objectives must demonstrate compliance with the objectives of the WFD. Specifically, a clear demonstration that the Project will not cause or contribute to deterioration of status or jeopardise the water body achieving good status. Any element that is identified to have the potential to adversely affect the quality of a water body must be examined with respect to specific objectives of the WFD and the RBMP. The information collected should facilitate:

Stage	Guidance
	1) The identification and description of those aspects of the Project that may affect a water body; 2) A description of the characteristics of the relevant water body, including their WFD objectives and an understanding of factors which either maintain or threaten those objectives. 3) An assessment of the impact of the proposed development on the relevant objectives; and 4) A conclusion as to whether the proposed development will: a) Cause or contribute to deterioration of status; or b) Jeopardise the water body achieving good status (or high status in the case of a water body with a high-status objective). Where potential for significant effects is identified, a mitigation and monitoring strategy shall be presented. This can align with EIAR requirements if screened in for EIA. Otherwise, a mitigation and monitoring strategy should be agreed with the planning authority and the developer to ensure no unforeseen effects from the construction or operation of the Project.
Justification or WFD Exception	Where a Project is considered likely to cause deterioration of the status (or potential) of a surface or groundwater body or prevents the achievement of good groundwater status, good ecological status / potential for water bodies currently failing to achieve this status / potential, Article 4(7) of the WFD provides a derogation whereby a Member State will not be in breach of the Directive provided all the conditions set out in Article 4(7) are met.

3.1 LIMITATIONS OF ASSESSMENT

The information used for this assessment is suitable for environmental assessment purposes only.

Assumptions related to the assessment undertaken at this stage are as follows:

- All publicly available scientific information ascertained to inform this assessment, is accurate and up to date reflecting the current environment baseline.
- Limitations related to the assessment undertaken at this stage are as follows:
- The most up to the date, publicly available information on WFD water body status and risk assessment used for this assessment was collected in 2021 and may not consider site specific sensitivities and changes since the assessments were undertaken.
- Assessment of cumulative impacts is based on publicly available information on other projects and plans that may be hydrologically linked to the Proposed Development.

4 PROJECT DESCRIPTION

Iarnród Éireann – Irish Rail is applying for development permission for the Rosslare Offshore Renewable Energy Hub (hereafter the 'Proposed Development'), located immediately adjacent and to the northwest of the existing Rosslare Europort at Rosslare Harbour in County Wexford, which is operated by Iarnród Éireann. The Proposed Development includes capital dredging to achieve navigable depths for vessels delivering ORE components; land reclamation to create a storage area for these components; and construction of two new berths to facilitate loading and unloading of ORE components. The land reclamation works include infilling the existing small boat harbour, after the construction of a new small boat harbour. The Proposed Development also includes the installation of a new slipway and facility for local clubs, such as the Sea Scouts.

The purpose of the Proposed Development is to provide a facility for the efficient handling and storage, marshalling, staging and integration of ORE components to facilitate installation of offshore wind energy projects by ORE developers and operators. The Proposed Development is designed to provide facilities that accommodate a wide range of infrastructure uses, both for current requirements and anticipated future needs. For instance, the Proposed Development could be used for traditional port activities if required, including during periods of reduced ORE-related activity. Refer to EIAR Chapter 6: Project Description for further detail.

The EIAR considers a project design life for the quay structures and marine works of 50 years from completion of construction. All port facilities developed for the ORE Hub will be retained and required by Iarnród Éireann – Irish Rail for ORE, traditional port activities[2], and community use beyond this time period (with ongoing maintenance and repairs undertaken) and therefore it is not considered necessary to plan for decommissioning and reinstatement works or for closure of the quays, storage areas, new Small Boat Harbour or parts of the ORE Hub once they are in-place.

The site location and Proposed Development Boundary are shown on Figure 4.1.

The Proposed Development Boundary (i.e., the area where development permission is sought to construct and operate the Proposed Development) encompasses a total area of 80ha, lying mostly within the maritime area, and includes the areas proposed for dredging and land reclamation.

The Proposed Development Boundary includes an area for capital dredging of 48.4ha and 27.7ha of reclamation from the sea providing operational area for the storage, marshalling, staging and integration of ORE components, traditional Ro-Ro port activities and a new replacement 'Small Boat' harbour (Figure 4.2).

The proposed new Small Boat Harbour will accommodate users of the existing Small Boat Harbour at Ballygeary (small fishing and leisure boats) which will be infilled as part of the Proposed Development. Proposals for the new Small Boat Harbour include marine enabling works (i.e., installation of pontoon restraint piles and pontoons) and installation of services for potential future

[2] Traditional port activities as defined in the Rosslare Europort Masterplan (March 2020) are roll-on/roll-off (RoRo) and passenger ferry services (RoPAX); storage and movement of trade cars and trailers; freight and passenger check-in operations; Customs and Immigration processing; marine services such as berthing, mooring and vessel turnaround; and some bulk cargo handling.

developments which may include facilities to accommodate crew transfer vessels (CTV) for Operations and Maintenance (O&M) of ORE assets, and a new RNLI base. Undertaking these advance provisioning works as part of the Proposed Development ensures construction and environmental efficiencies while marine plant is readily available. The buildings and facilities required for these potential future uses are not included in the Proposed Development. The new Small Boat Harbour will be securely separated from the much larger vessels and operations in the main ORE facility.

The key elements of the Proposed Development are listed in Table 4.1.

Table 4.1: Summary of the Proposed Development

Development / Activity	Description
Site preparation and mobilisation	• Site clearance involving removal of the existing small storage sheds, pontoons, gangways, timber mooring posts and timber structures at the small boat harbour; and establishment of a temporary site compound.
Capital dredging	• The navigation channel will be dredged to a depth of -10 metres Chart Datum (m CD). The berth pocket for ORE Berth 1 will be dredged to a depth of -12m CD. The total area to be dredged is 48.4 hectares (ha).
Land reclamation	• Land reclamation including infilling of the small boat harbour, using the marine dredged material and imported rockfill to create 27.7ha of land for the Proposed Development. • Installation of rock armour revetments around the perimeter of the reclamation area
ORE Storage Area	• Creation of an ORE Storage Area of 19.7ha, within the reclaimed lands, for the handling and storage, marshalling, staging and integration of ORE components.
ORE Berth 1	• Construction of ORE Berth 1, a heavy lift berth with a continuous open piled quay length of 330 metres (m).
ORE Berth 2	• Construction of ORE Berth 2, with a continuous open piled quay length of 240m.
ORE Compound	• A compound area of 0.2ha for installation of temporary modular buildings for site offices, welfare, logistics, and parking to service ORE developers.
New Small Boat Harbour	• Construction of a new Small Boat Harbour consisting of: ○ a 50m long fixed quayside berth and an 80m long floating pontoon ○ a 2.4m wide pontoon to provide 64 no. berths ○ a 127m long floating pontoon with 10 no. berths ○ 1 no. fixed berth for emergency service vessels ○ 10 no. single storey storage sheds ○ a slipway for launching and recovery activities ○ marine enabling works and installation of services to provide for potential future uses.
Sea Scouts Facility	• Construction of a slipway to the western flank of the newly reclaimed lands with a new storage shed and parking to accommodate local clubs, such as the Sea Scouts.
Ancillary works	• Site access to the Proposed Development and a new access road and footpath/cycle track to the proposed new Small Boat Harbour. • A medium voltage single storey electrical substation and switch room

Development / Activity	Description
	• Lighting • Fencing and security measures • Parking • Waste management facilities • Fire water network and storage • Landscaping • Foul water network and pumping infrastructure • Water mains network • Surfacing and drainage • Environmental enhancements

Additional information and details are included in the accompanying EIAR Volume 2: Chapter 6: Project Description.

Table 4.2 provides a breakdown of areas for the Proposed Development and the Proposed Development location and boundary are shown in Figure 4.1.

Table 4.2: Table of Areas for works in Proposed Development

Boundary	Elements	Area (ha)
Proposed Development Boundary	**All**	**80.3**
	Dredging area (includes side slopes and berth pockets)	48.4
	Marine reclamation area (includes enclosed water in new Small Boat Harbour)	27.7
	Terrestrial reclamation and existing land area	4.2
Proposed Development Operational Area	**All** (excludes rock armoured revetments, perimeter landscaping, pontoons, berths and enclosed water in new Small Boat Harbour)	**24.5**
	ORE Storage Area (includes concrete apron area of 1.6ha)	19.7
	ORE office and parking compound	0.2
	ORE quays	2.0
	Access roads, new Small Boat Harbour and Sea Scouts Facility	2.6
New Small Boat Harbour Enclosed Water	Enclosed water in New Small Boat Harbour (includes area taken by pontoons and navigable berths)	2.2

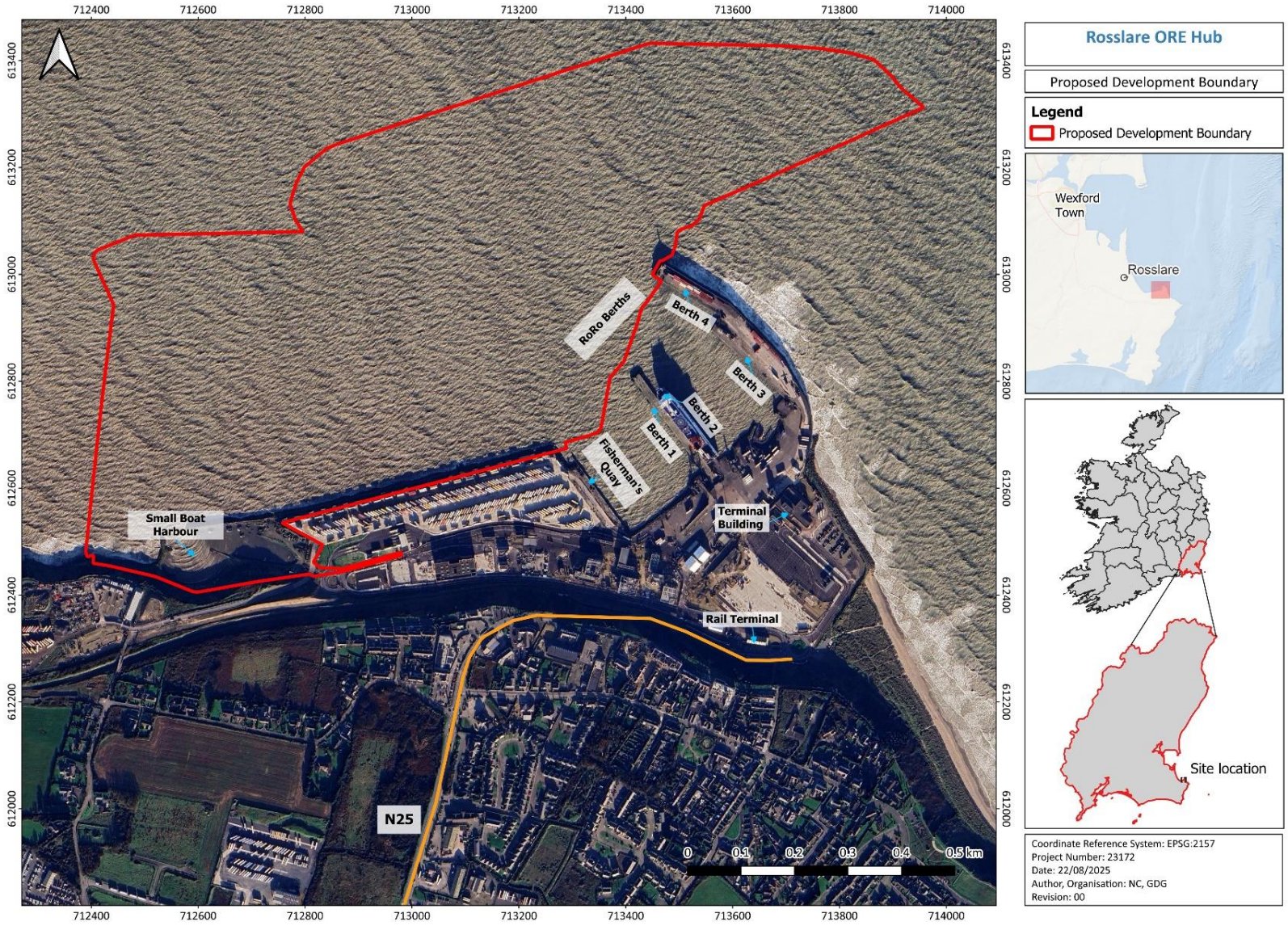

Figure 4.1 Proposed Development Boundary and location

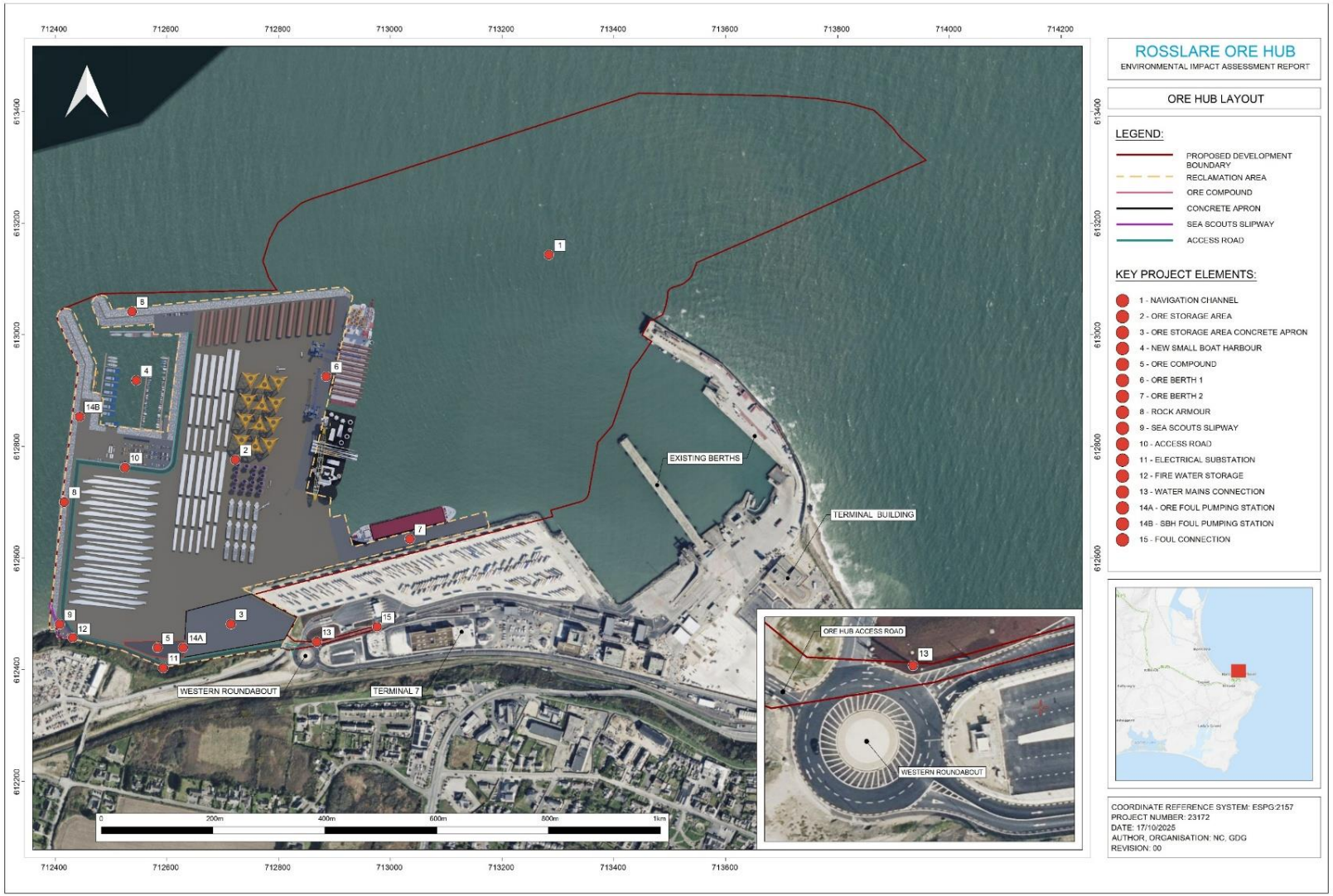

Figure 4.2: Key Project Elements

4.1 CONSTRUCTION ACTIVITIES

The principal construction works are listed below.

- Mobilisation and Establishing the Temporary Site Compound
- Dredging and Reclamation Works
- Piling Works
- Construction of Rock Armour Revetments
- Concrete Works
- Ancillary Works

Construction works (excluding dredging and reclamation) will be undertaken between 7am to 7pm Monday to Saturday. Work outside of these hours may be required on an infrequent basis to suit tides and vessel movements. If, in exceptional circumstances, works are required outside of these hours, the relevant statutory authorities will be notified in advance.

Dredging activities are expected to be ongoing for up to 24 hours per day, 7 days per week (24/7). The dredged material needs to be continually transported to the reclamation area to enable continuous dredging activities. For this reason, the reclamation activities will also need to be carried out on the same schedule.

It is expected that the construction phase will span 24 months from commencement to completion, with multiple tasks ongoing in parallel (Figure 4.3).

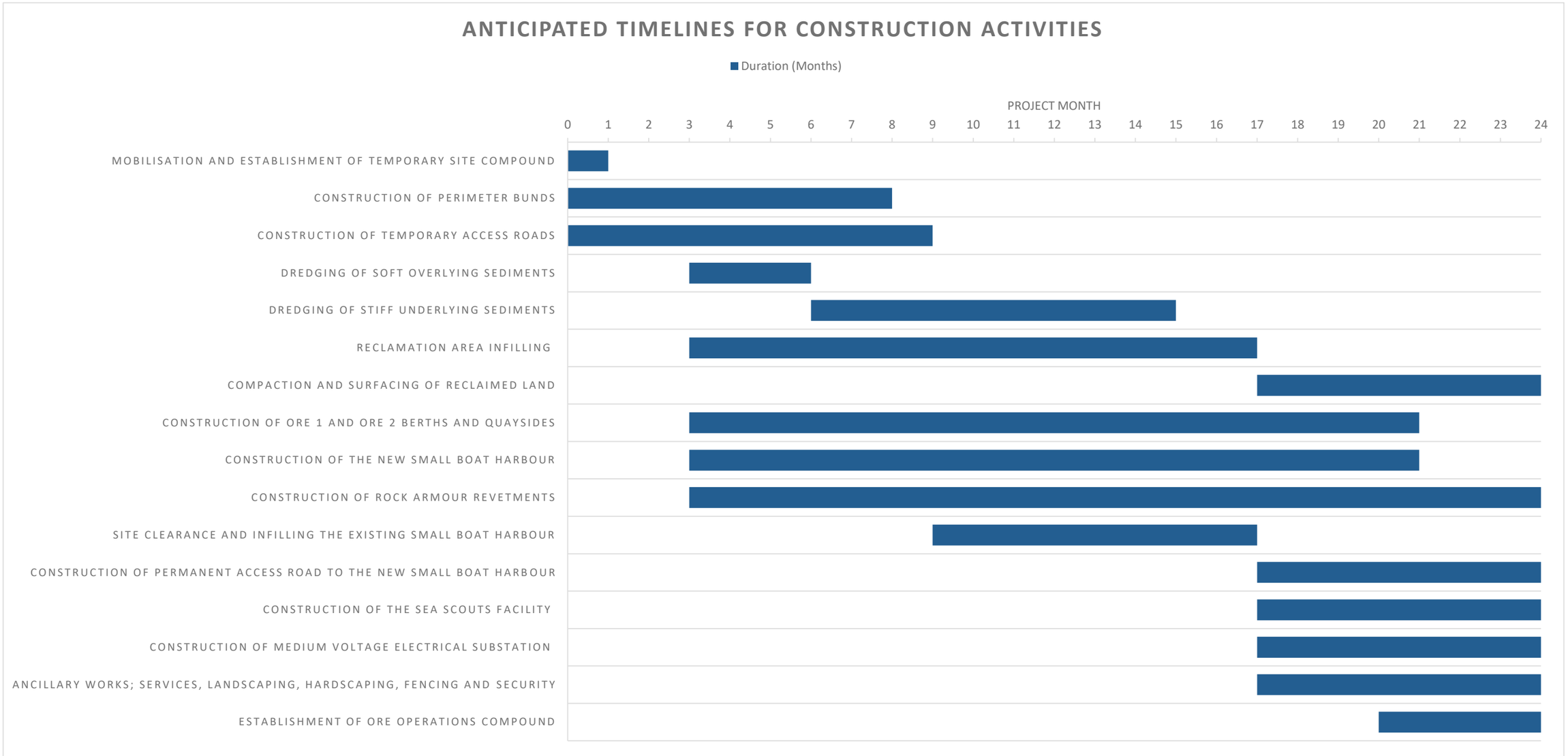

Figure 4.3: Anticipated timelines for construction activities

4.2 OPERATIONAL ACTIVITIES

The Rosslare Europort ORE Hub, once operational, will allow for efficient handling and storage, marshalling, staging and integration of ORE components to facilitate installation of ORE projects. It is expected that the ORE Hub will see a throughput of 50-65 turbines (i.e., 1GW) per annum with components arriving and departing by sea.

More activity is expected in summer months, when favourable sea conditions are more likely. However, this will vary depending on the installation vessels used and ORE project characteristics such as location and foundation type.

The heavy-lift quayside will be used for the temporary assembly of towers and preparation for installation of components of wind turbines prior to out-loading onto installation vessels. Partially erected towers and components such as blades and turbines being transited from the ORE Storage Area awaiting out-loading to the installation vessels will be temporarily stored on the ORE Berth 1 quay during this time.

Both ORE Berth 1 and ORE Berth 2 will be used so that incoming components can be delivered from a vessel without hindering the integration and out-loading of components onto an installation vessel. Heavy equipment will move the components in the ORE Storage Area.

The anticipated number of project vessels using the main berths is relatively low, with peak traffic numbers during an Offshore Wind Farm lifecycle of up to one large vessel every two days to ORE Berth 1. In off-peak periods this could be as low as one large vessel every two weeks. On average it is expected that installation vessels will call to the ORE Hub every 4 to 8 days depending upon size, distance to the wind farm, and weather conditions. ORE installation vessels which will use ORE Berth 1 will convey 4 to 7 sets of components in any trip depending on component size and vessel capacity. Vessels will range from 160m to 250m in length and will either rely on steel legs that are lowered into the seabed for stability or be dynamically positioned to hold station in the water. Vessels which will use ORE Berth 2 will be 160m to 180m in length and will either deliver components by Load-on Load-off (LoLo) method (i.e., blades and tower sections) or RoRo (i.e., nacelle and tower sections). Deliveries arising from traditional port activities will be accepted at the ORE Berths on an ad hoc basis (i.e., if ORE Berths are available and the existing berths within Rosslare Europort are occupied).

The new Small Boat Harbour will have pontoons for 64 local boats and a 50m long fixed berth and 80m length of floating pontoon for local fishermen. The fishing pontoon allows for easy docking and manual loading at low tide whilst the solid quay allows for loading/unloading of heavier goods from a davit or mobile crane on the solid quayside.

5 BASELINE ENVIRONMENT

This section describes the existing conditions of the water bodies hydrologically linked to the Proposed Development, in the context of the WFD.

5.1 PHYSICAL SETTING

The Slaney and Wexford Harbour WFD Catchment (Catchment 12), within which the Proposed Development is located, covers an area of approximately 1,762km², and includes the River Slaney and all streams entering tidal waters at Wexford Harbour (EPA, 2021) (Figure 5.1). The largest urban centre in the catchment is Wexford Town, with other key urban areas including Enniscorthy, Bunclody, Carnew, and Ferns. The catchment has a population of approximately 130,000 people. It features a mix of upland areas underlain by granite and sandstone in its northern and central regions, transitioning to low-lying, fertile agricultural lands over limestone and shale as it approaches Wexford Harbour. The catchment supports diverse land uses, including forestry, agriculture, and urban development.

The subcatchment where the Proposed Development is located is Forth_Commons_SC_010 (subcatchment 12_5). The Forth Commons subcatchment includes the lower reaches of the Forth River and associated tributaries before they discharge into the Slaney Estuary. The subcatchment covers an area of approximately 45km² and is predominantly rural with pockets of urbanisation near Wexford Town. The land cover consists mainly of agricultural fields interspersed with small woodland areas and rural settlements. The subcatchment is underlain by a mix of aquifers with variable subsoil permeability, which influences surface water drainage and groundwater recharge. The Bridgetown GWB, in the southeast corner of the subcatchment, is poorly productive. The hydrological response is not particularly flashy, as rainfall typically infiltrates or is stored within the agricultural landscape. Pollutant pathways in this subcatchment are largely associated with sources such as agricultural runoff, including nutrients and sediments, with additional risks from small-scale wastewater treatment systems in rural settlements.

The ZoI considered in this chapter comprises both onshore and offshore elements and is governed by the hydrological linkages between the site and different interacting WFD water bodies (i.e.. river, transitional, coastal, and groundwater). As a result, the ZoI comprises a large area which spans onshore watercourses around Rosslare Harbour, Rosslare Town and the South Slob Channel, to the offshore water bodies ranging from Wexford Harbour and Slobs to the Southwestern Irish Sea. Hydrological flow directions in this area of the Catchment are north and northwest towards the Lower Slaney Estuary and Wexford Harbour area. Some water bodies discharge to the South Slob Channel first, located between Rosslare and Wexford Town.

Within the immediate vicinity of the Proposed Development, low subsoil permeability and limited recharge of groundwater means most of the precipitation results in surface runoff. Any water not directed into artificial drainage follows local topographic gradients and discharges directly northwards to the Southwestern Irish Sea. There are no lake water bodies or reservoirs within the ZoI.

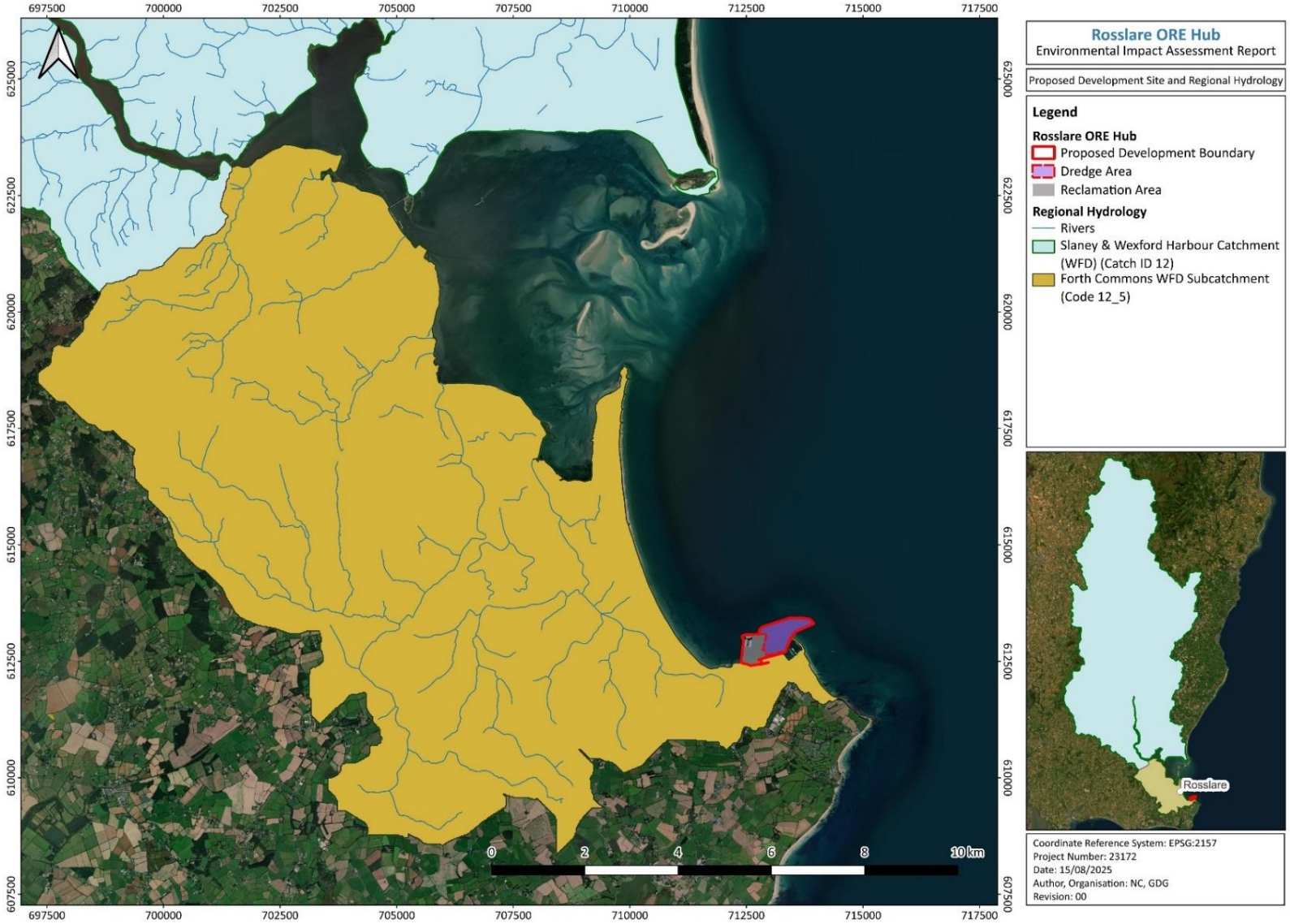

Figure 5.1: Regional hydrological setting

5.2 WATER QUALITY OF RELEVANT WATER BODIES UNDER THE WFD

The following sections identify the water bodies in the ZoI of the Proposed Development and summarise their WFD status based on results of the 2016 to 2021 WFD status classification of these river, transitional, coastal, and groundwater water bodies.

Catchment reporting (EPA, 2019) identifies pressures which have affected water quality status within these water bodies. These pressures include agricultural activities and pollutants, Domestic Waste Water (DWW), Urban Waste Water (UWW) and diffuse urban run-off.

5.2.1 RIVER WATER QUALITY

The Proposed Development is located within the Milltown Roslare_010 WFD River Sub Basin (Figure 5.2). There are no river channels entering the Proposed Development boundary or terminating within Rosslare Harbour. The closest river is 550m southwest of the Proposed Development boundary.

EPA report the following in relation to river water quality:

- WFD River Water body water quality status:
    - Milltown Roslare_010 was classified as of 'Moderate' status for the 2016 – 2021 WFD assessment period (Figure 5.3). This represents no change from the 2015 -2018 assessment period.
    - Biotic indices "Q-values" (Q1-Q5) represent a classification of the biological and chemical condition of surface watercourses, with Q1 representing the poorest quality and Q5 signifying unpolluted / 'high' water quality status sites. The latest Q-values for Milltown Roslare_010 are Q3-4, reflecting 'Moderate' water quality status.
- WFD River Water body water quality Risk Assessment status:
    - According to the latest WFD 3rd risk assessment cycle (2015 – 2018), the Milltown Roslare_010 is designated as under 'Review' with regards to meeting WFD environmental objectives by 2027 (Figure 5.4).

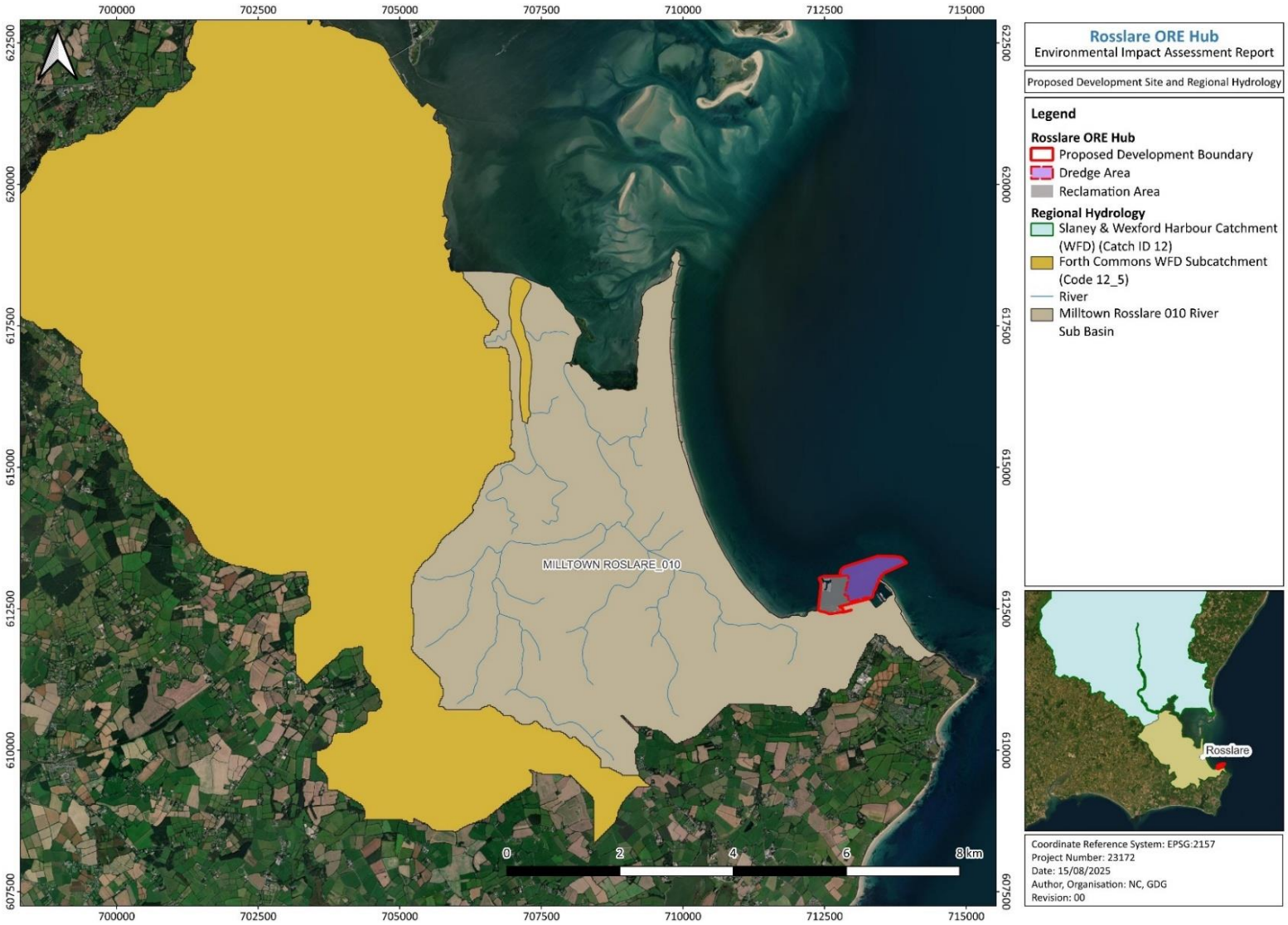

Figure 5.2: WFD subcatchments and river watercourses (EPA, 2024)

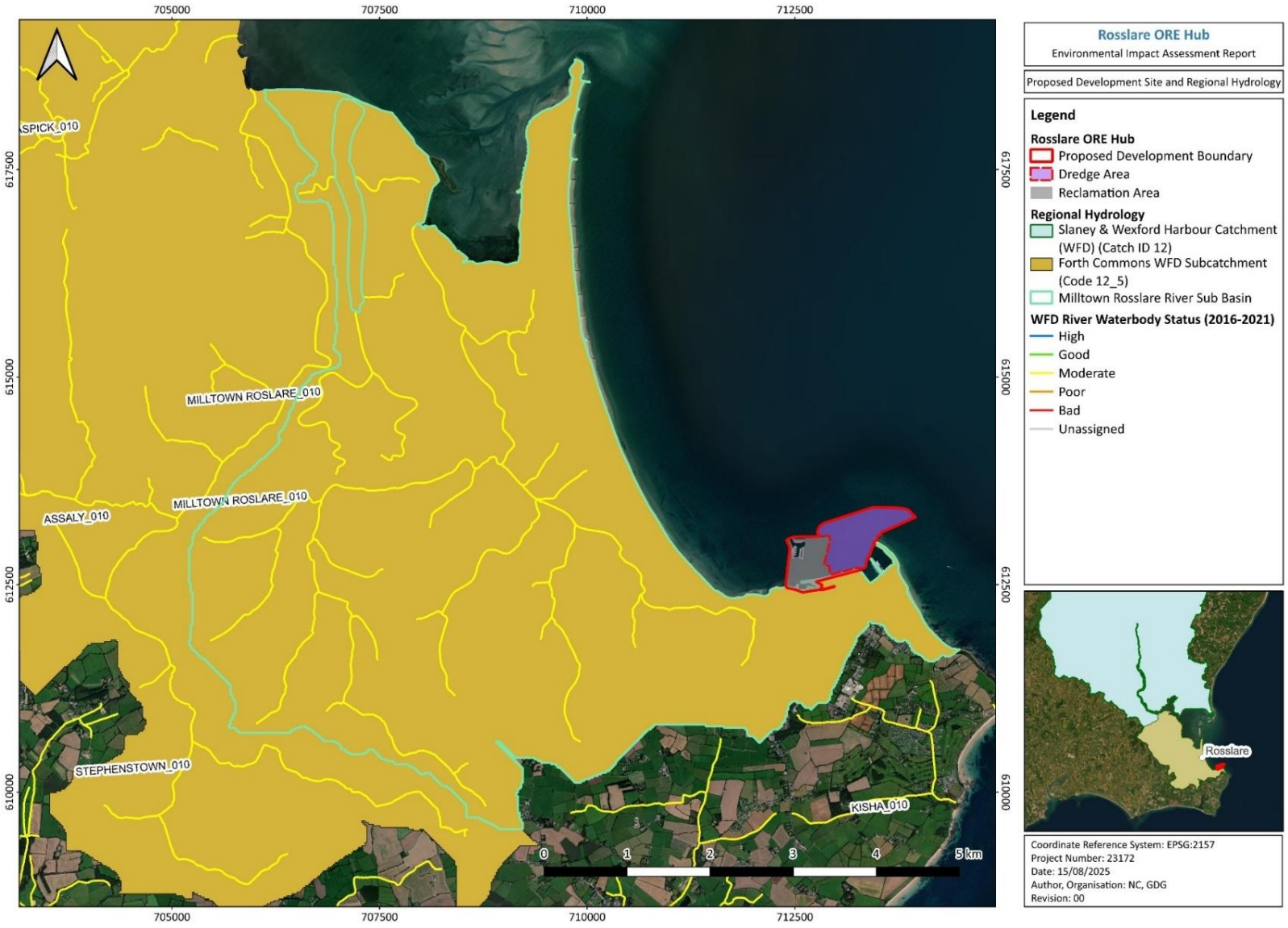

Figure 5.3: WFD River water body water quality status (EPA, 2024)

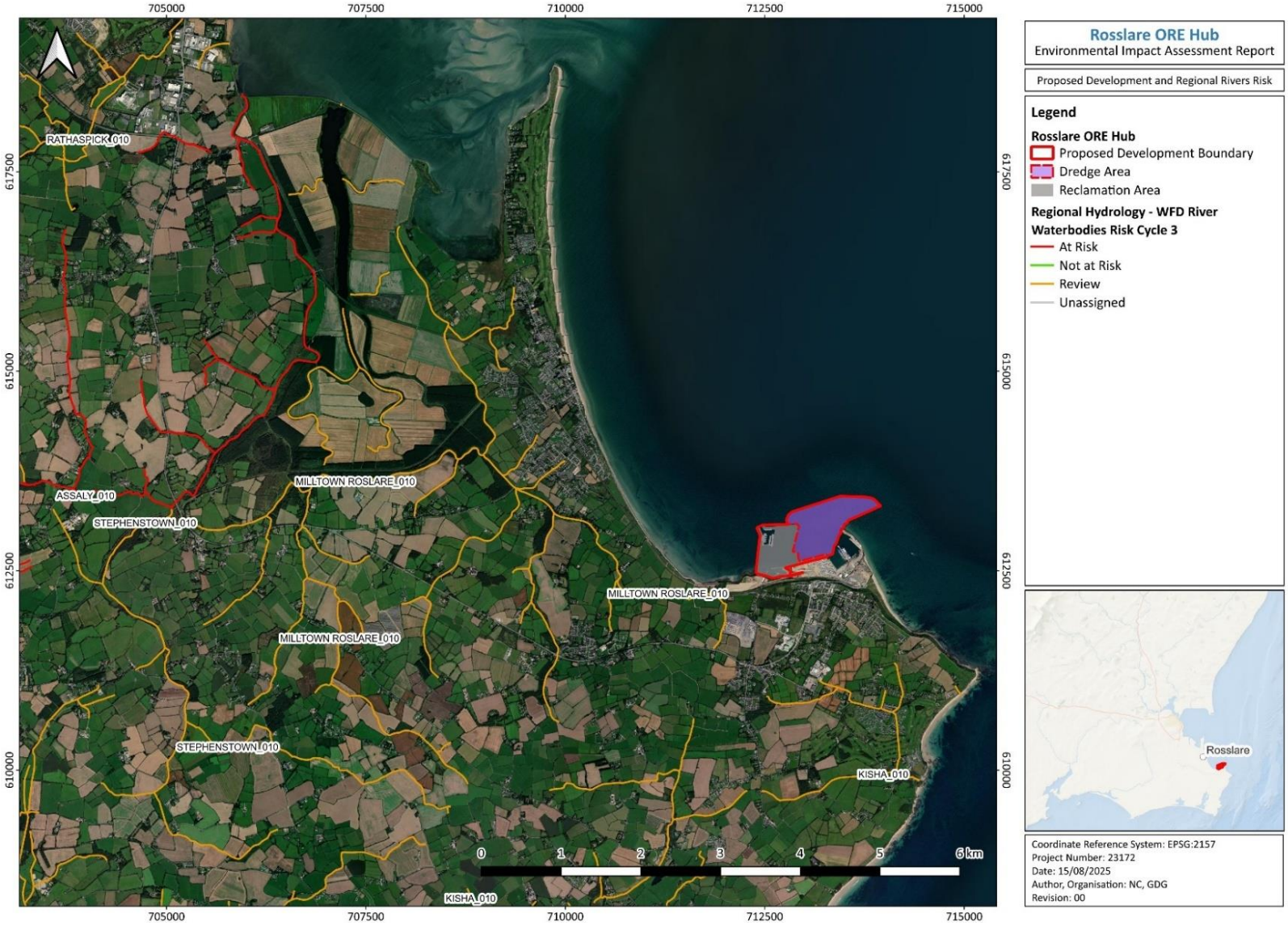

Figure 5.4: WFD River water body at-risk status (EPA, 2024)

5.2.2 TRANSITIONAL WATER BODY QUALITY

There is one WFD Transitional water body (TWB) within the ZoI, the South Slob Channel, approximately 5.8km to the northwest and downstream of the Milltown Roslare_010 stream.

- EPA report the following in relation to transitional water quality: WFD River Water body water quality status:
    - The South Slob Channel was classified as being of 'Moderate' status for the 2016 – 2021 assessment period (Figure 5.5). It was classified as 'Unassigned' for the 2015 -2018 assessment.
- WFD River Water body water quality Risk Assessment status:
    - According to the latest WFD 3rd risk assessment cycle (2015 – 2018), the South Slob Channel is currently designated as under 'Review' with regards to meeting WFD environmental objectives by 2027 (Figure 5.6).

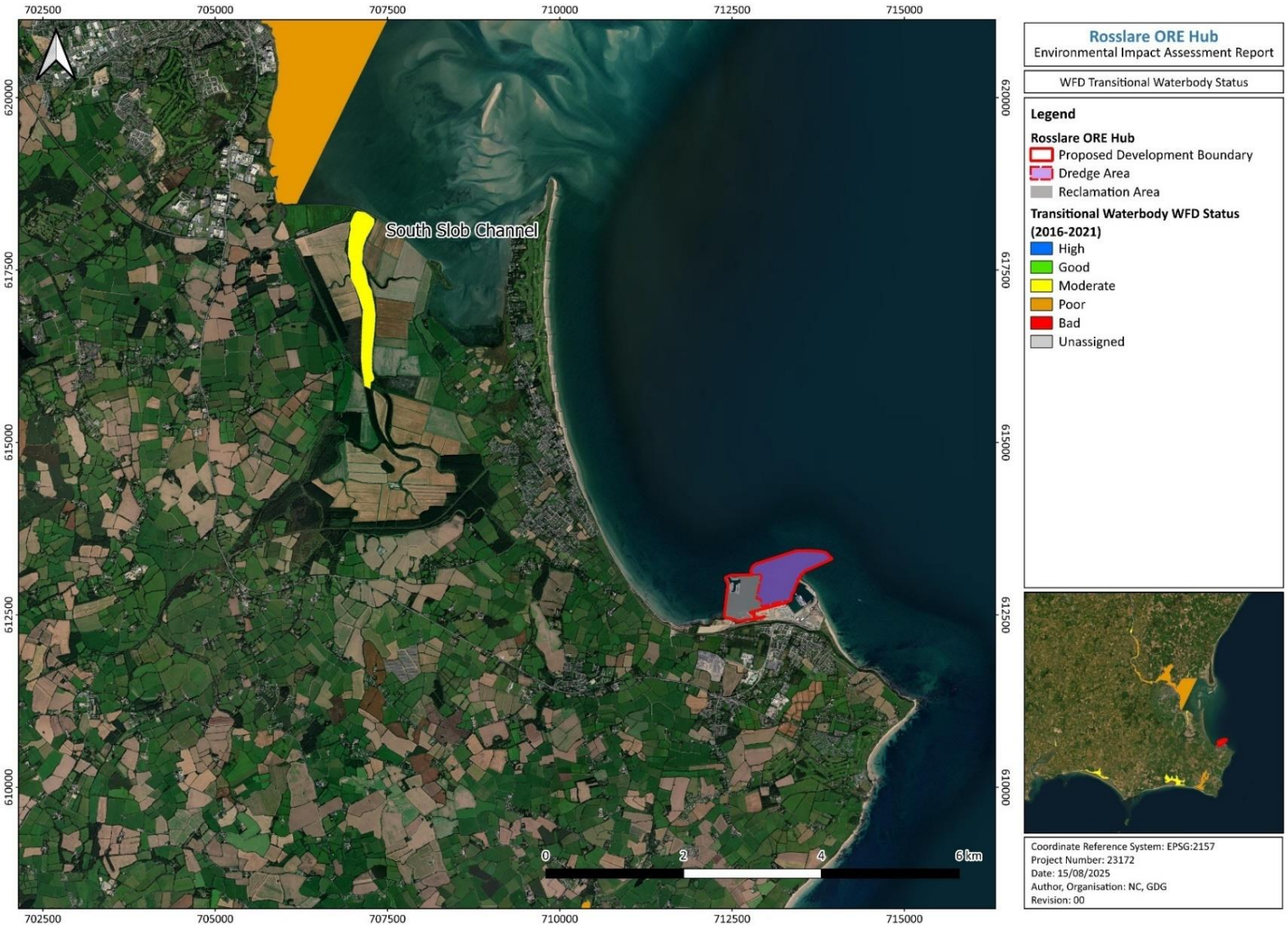

Figure 5.5: WFD Transitional water body status (EPA, 2024)

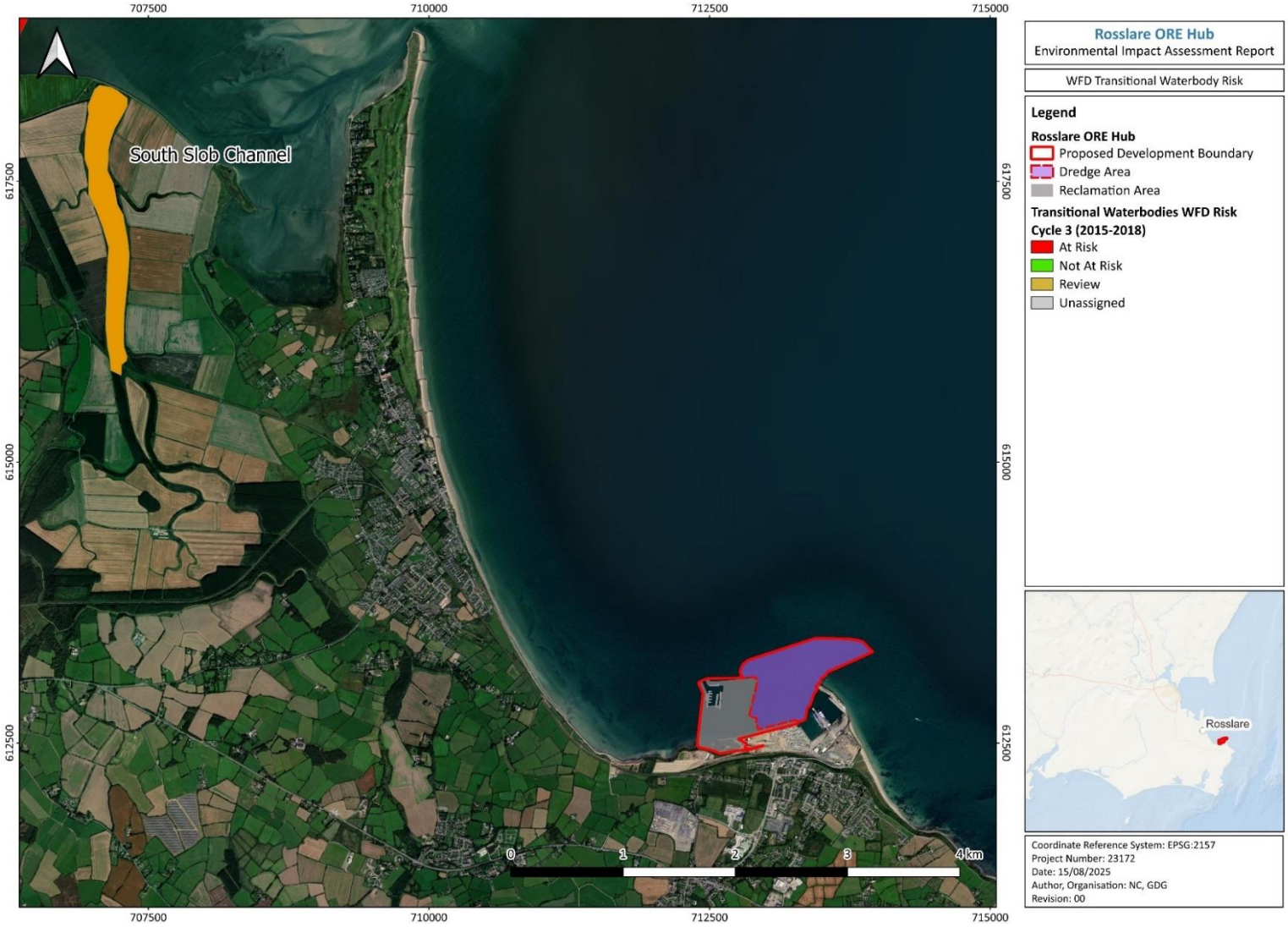

Figure 5.6: WFD Transitional water body risk

5.2.3 COASTAL WATER QUALITY

There are three WFD Coastal water bodies (CWB) within the ZoI.

- The Proposed Development overlaps with the 'Southwestern Irish Sea' and 'Rosslare Harbour' CWBs.
- 'Wexford Harbour' CWB is located approximately 4.7km to the northwest of the Proposed Development.

EPA report the following in relation to coastal water quality:

- WFD River Water body water quality status:
    - Southwestern Irish Sea (HAs 11;12) was classified as being of 'Good' status for the 2016 – 2021 assessment period (Figure 5.7). This represents an improvement in water quality from 'Moderate' status since the 2015 - 2018 assessment.
    - Rosslare Harbour was classified as being of 'Good' status for the 2016 – 2021 period. This represents a deterioration in water quality from 'High' status since the 2015 -2018 assessment.
    - Wexford Harbour was classified as being of 'Moderate' status for the 2016 – 2021 period. This represents a deterioration in water quality from 'Good' status since the 2015 -2018 assessment.
- WFD River Water body water quality Risk Assessment status:
    - According to the WFD 3rd risk assessment cycle, the Wexford Harbour CWB is 'At Risk' of failing to meet its WFD environmental objectives by 2027 (Figure 5.8).
    - The Southwestern Irish Sea (HAs 11;12) CWB is considered 'Not At Risk' of failing to meet its WFD environmental objectives by 2027
    - Rosslare Harbour is designated as under 'Review'.

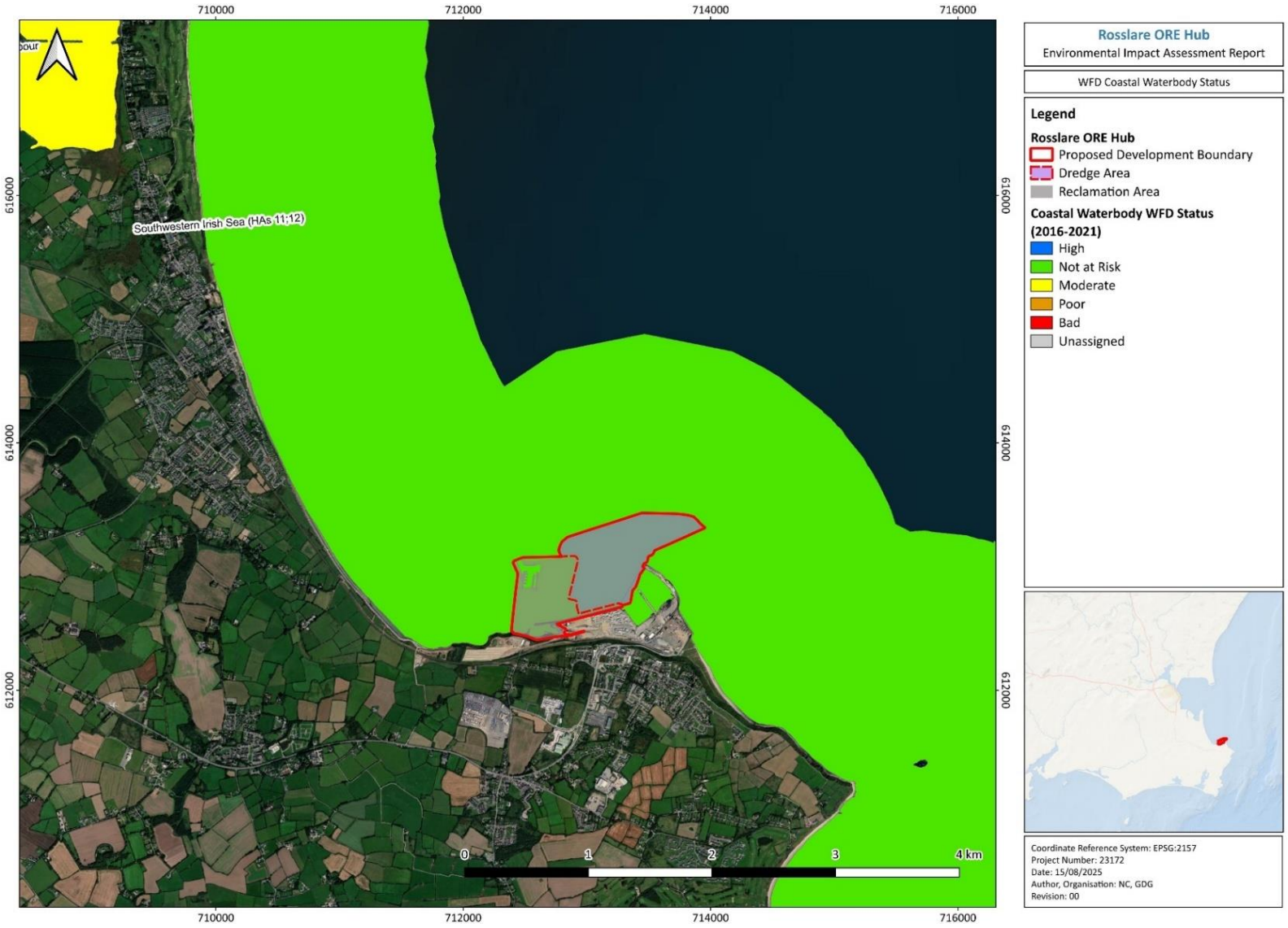

Figure 5.7: WFD Coastal water bodies status (EPA, 2024)

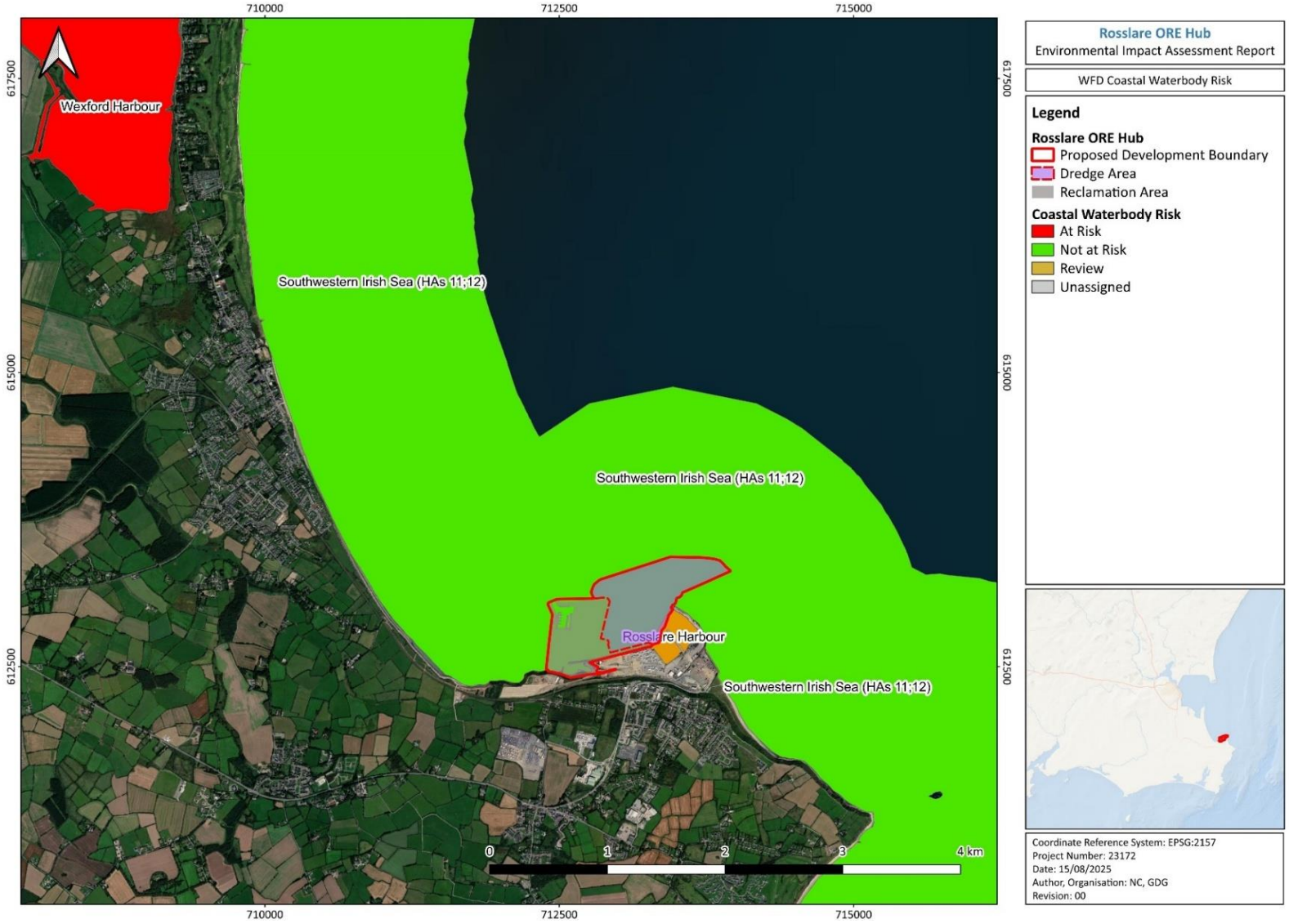

Figure 5.8: WFD Coastal water bodies risk (EPA, 2024)

5.2.4 GROUNDWATER QUALITY

The Proposed Development overlies the Bridgetown GWB, which encompasses the southeastern extremity of Co. Wexford, from Rosslare to Kilmore Quay. Aquifer classification for the area is Pl – 'Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones' and groundwater vulnerability is 'Moderate' (GSI, 2017).

The EPA report the following in relation to groundwater quality:

- WFD River Water body water quality status:
    - Bridgetown GWB was classified as being of 'Good' status for the 2016 – 2021 assessment period (Figure 5.9). This represents no change in status since the 2015 -2018 assessment
- WFD River Water body water quality Risk Assessment status:
    - According to the latest WFD 3rd risk assessment cycle (2015 – 2018), the Bridgetown GWB is designated as 'Not at risk' of failing to meet WFD environmental objectives by 2027 (Figure 5.10).

Bedrock strata are noted to be siliceous in nature, with the resulting hydrochemical signature expected to reflect this (Cullen, 1978; GSI, 2005).

Due to the nature of the ORE Hub and the relatively limited scale of geotechnical activities in the onshore application area which encompasses the Bridgetown GWB, there are no likely water quality effects on groundwater. This is supported by the hydrogeological assessment presented in Chapter 7 and Chapter 9 of the EIAR which address Soils, Geology and Hydrogeology, and Water Quality, respectively.

Groundwater chemical quality can impact on surface water, however, no pathway between surface water and groundwater water bodies has been identified at the site.

Impacts on groundwater water bodies are therefore not considered further in this assessment.

Figure 5.9: WFD Groundwater body status (EPA, 2024)

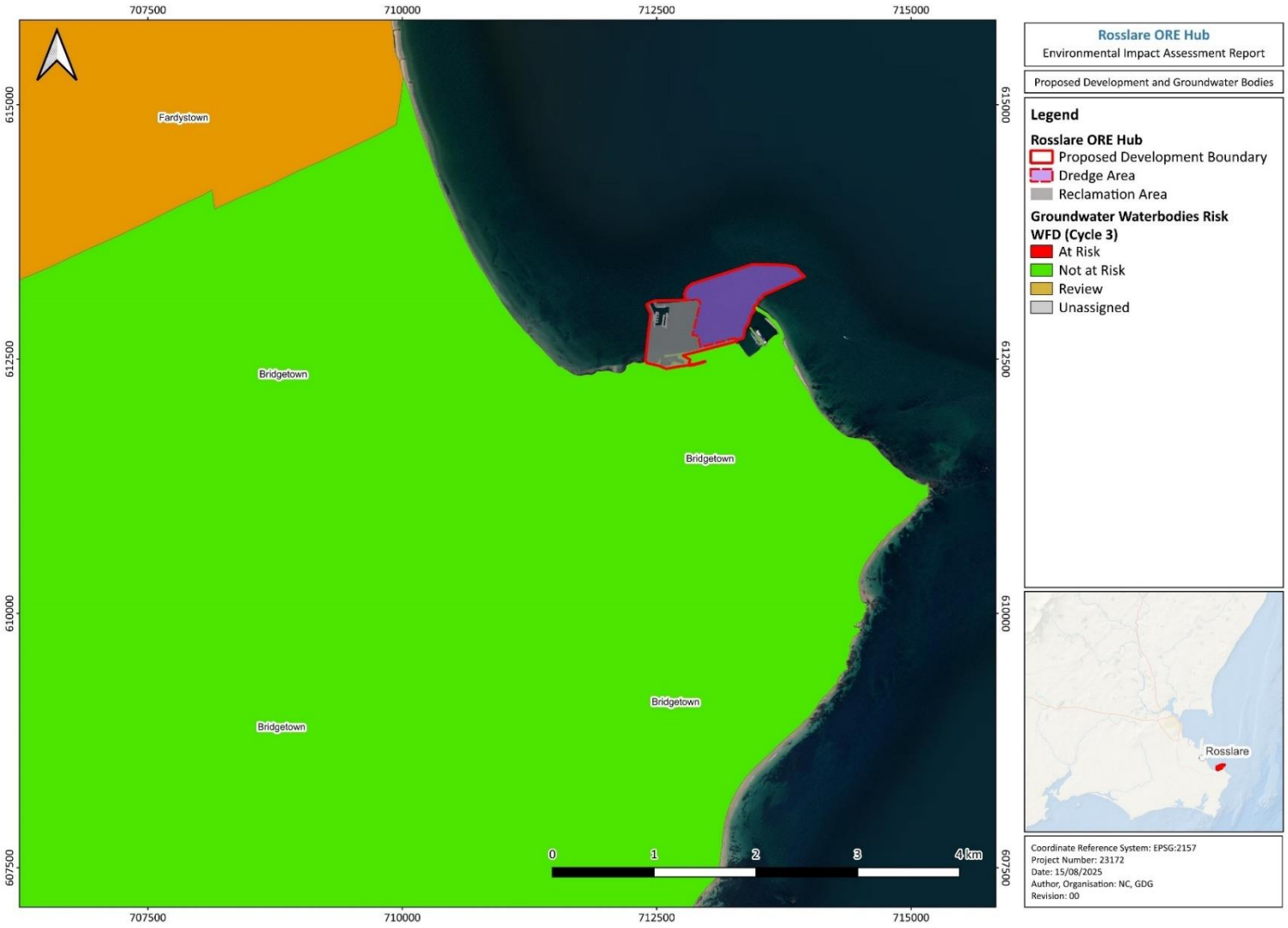

Figure 5.10: WFD Groundwater body risk (EPA, 2024)

5.2.5 WATER FRAMEWORK DIRECTIVE WATER QUALITY SUMMARY

Overall WFD classifications and known significant pressures on water quality from 2007-2021 (i.e., the past three WFD classification cycles) for the relevant water bodies are shown in Table 5.1. The ecological and chemical elements used to determine status for the 2016-2021 WFD cycle are shown in Table 5.2.

Table 5.1: WFD Status (2007-2021)

WFD Status 2007-2021	Southwestern Irish Sea	South Slob Channel	Wexford Harbour	Milltown Rosslare River	Rosslare Harbour
WFD ID	IE_SE_010_0000	IE_SE_040_0400	IE_SE_040_0000	IE_SE_12M860440	IE_SE_045_0000
Water body Type	Coastal	Transitional	Coastal	River	Coastal
Overall WFD Status (2007-2009)	Good	Unassigned	Moderate	Unassigned	Unassigned
Overall WFD Status (2010-2012 – Interim)	Moderate	Unassigned	Moderate	Unassigned	Unassigned
Overall WFD Status (2010-2015)	Good	Unassigned	Moderate	Unassigned	Unassigned
Overall WFD Status (2013-2018)	Moderate	Bad	Good	Moderate	High
Overall WFD Status (2016-2021)	Good	Moderate	Moderate	Moderate	Good

WFD Status 2007-2021	Southwestern Irish Sea	South Slob Channel	Wexford Harbour	Milltown Rosslare River	Rosslare Harbour
Significant Pressures (EPA, 2021)	n/a	Anthropogenic Pressures	Agriculture, Urban Waste Water	Agriculture, Urban Waste Water, Domestic Waste Water	n/a

Table 5.2: Biological, chemical and hydromorphological determinants for 2016 – 2021 WFD Water bodies Status

WFD Status 2016-2021			Southwestern Irish Sea	South Slob Channel	Wexford Harbour	Milltown Rosslare River	Rosslare Harbour
			IE_SE_010_0000	IE_SE_040_0400	IE_SE_040_0000	IE_SE_12M860440	IE_SE_045_0000
Ecological Status	Biological Status	Phytoplankton Status	Not Available	Not Available	Good	Not Available	Not Available
		Other Aquatic Flora Status	Not Available	Not Available	Not Available	Not Available	Not Available
		Invertebrate Status	Good	Not Available	Moderate	Not Available	Not Available
		Fish Status	Not Available	Not Available	Not Available	Not Available	Not Available
	Supporting Chemistry Conditions	Oxygenation Conditions	Not Available	Not Available	High	Not Available	Not Available
		Nutrients Conditions	High	Not Available	Good	Not Available	Not Available
		Relevant Pollutants	Not Available	Not Available	Not Available	Not Available	Not Available
	Hydromorphological Quality Element	Hydrology, Morphology, Continuity	Not Available	Not Available	Not Available	Not Available	Not Available
	Ecological Status (2016 – 2021)		**Good**	**Moderate**	**Moderate**	**Moderate**	**Good Potential**

WFD Status 2016-2021		Southwestern Irish Sea	South Slob Channel	Wexford Harbour	Milltown Rosslare River	Rosslare Harbour
		IE_SE_010_0000	IE_SE_040_0400	IE_SE_040_0000	IE_SE_12M860440	IE_SE_045_0000
Chemical Status	Chemical Status (2016 – 2021)	High	Not Available	Good	Not Available	Not Available
Overall WFD Quality Status (2016 – 2021)		Good	Moderate	Moderate	Moderate	Good Potential

5.2.6 HEAVILY MODIFIED WATER BODY DESIGNATION

A Heavily Modified Water Body (HMWB) designation is assigned to bodies of surface water which have been substantially changed in their hydromorphological character for the purpose of a specified use.

As per Article 4(3) of the WFD, a water body is suitable for designation as an HMWB if:

a) *The changes to the hydromorphological characteristics of that body which would be necessary for achieving Good Ecological Status would have significant adverse effects on:*

   i. *The wider environment;*

   ii. *Navigation, including port facilities, or recreation;*

   iii. *Activities for the purposes of which water is stored, such as drinking-water supply, power generation, or irrigation;*

   iv. *Water regulation, flood protection, land drainage; or*

   v. *Other equally important sustainable human development activities.*

b) *The beneficial objectives served by the artificial or modified characteristics of the water body cannot, for reasons of technical feasibility or disproportionate costs, reasonably be achieved by other means, which are a significantly better environmental option. Such designation and the reasons for it shall be specifically mentioned to the river basin management plans required under Article 13 and reviewed every six years.*

Rosslare Harbour was designated as an HMWB in the first WFD cycle (2008), as a result of the structures and changes to bed morphology required for its use as a port location - with the key changes being dredging and shoreline alterations.

As highlighted in the Review of Ireland's Heavily Modified Water Body Designations for the Third Cycle River Basin Management Plan (EPA, 2022):

> *Water bodies that are designated as heavily modified have a WFD environmental objective of Good Ecological Potential rather than Good Ecological Status. The designation means that a realistic objective is set that acknowledges that the water body has been physically altered for a specified use that society needs to be continued. The physical modifications caused by the use need to be mitigated against as far as possible, whilst acknowledging that the specified use needs to be retained. For example, a fish pass designed to best practice standards might be required on an instream barrier to ensure fish passage.*

The EPA uses expert judgement to determine what Good Ecological Potential (GEP) represents in the context of HMWB designations based on what mitigation measures are possible whilst still retaining the specified use of the water body. The Prague approach is applied to establish when Good Ecological Potential is awarded, which considers:

1) Are relevant mitigation measures (Table 5.3) in place?

2) Has the water body achieved Good (or better) condition for the monitored biological quality elements (BQE) that are not sensitive to hydromorphological modification?

3) Has the water body achieved the physico-chemical conditions equivalent to Good Ecological Status, except where parameters are impacted by the hydromorphological alteration caused by the specified use?

4) Has the water body achieved the best state previously achieved since the modification for the monitored biological quality elements that are sensitive to hydromorphological modification, where those data are available?

Rosslare Harbour HMWB has not been selected for ongoing monitoring in the Third RBMP cycle and is assessed via grouping with larger coastal bodies of water.

This WFD compliance assessment assesses how the Proposed Development will contribute to the implementation of HMWB mitigation measures for Rosslare Harbour HMWB and to contribute to the environmental objective of Rosslare Harbour in maintaining Good Ecological Potential.

Table 5.3: HMWB Specific Mitigation Measure Categories

Mitigation Measure Grouping	Examples of measures to reach Good Ecological Potential
Improve habitat diversity and morphology of seabed	• The use of breakwaters to create variation in depth and shelter. • Local deepening by dredging where sustainable.
Intertidal habitat restoration or enhancement or creation	• Habitat rehabilitation. • The use of breakwaters or similar to create conditions promoting intertidal enhancement. • Managed realignment to new line.
Beach or foreshore replenishment	• Replenish with natural materials to allow restoration or enhancement.
Sediment management	• Sediment bypassing, move sediment behind breakwater. • Sever root of groyne to reinstate longshore sediment transport.
Beneficial use of dredged material	• Where dredging for navigation purposes result in a waste to be disposed, seek opportunities to use materials beneficially.
Modification or management of structures or operations	• Remove redundant infrastructure. • Explore use of SMART technology for vessel traffic management. • Speed limits to reduce wash-induced erosion.
Soft engineering solutions; use of vegetation	• Protective structures such as brushwood groynes or sediment filled geotubes. • Seeding, planting, transplanting e.g. marsh or dune vegetation.
Realign to mitigate effects on flow	• Construct structures to normalise flow; realign breakwater • Reduce wave reflections; increase wave absorption.

Mitigation Measure Grouping	Examples of measures to reach Good Ecological Potential
Reprofile embankment structures	• Naturalise profile to support habitat development or enhancement.
Fish pass	• Install fish pass or similar at sluices or water level control structures.
Seasonal or tidal constraints	• Constraints on maintenance activities during breeding/spawning. • Working on floor or ebb tides to avoid impacts on adjacent habitats.
Selection of methods or equipment	• Select dredging method to retain sediment in system or to avoid raising suspended sediment levels.

5.2.6.1 PHYSICO-CHEMICAL CONDITIONS

The modifications to a water body that lead to the designation of HMWB can cause downstream physico-chemical changes that may be detrimental to the WFD objectives of Good Ecological Status or potential of that receiving water body. Rosslare Harbour has not been selected for monitoring for physico-chemical elements in any RBMP rounds to date. Rosslare Harbour is directly connected to the Southeastern Irish Sea coastal water body which is monitored for a number of quality elements as part of the RBMP for the Slaney & Wexford Catchment.

5.2.6.2 BIOLOGICAL QUALITY ELEMENTS (BQE)

Not all Biological Quality Elements are likely to be sensitive to hydromorphological changes associated with HMWB designations. The EU CIS Guidance Document (EC, 2019) includes the following BQEs are considered relevant to the activities of the Proposed Development:

- Fish
- Invertebrates
- Angiosperms
- Macroalgae

Further detail on the baseline conditions and potential effects of the Proposed Development on these BQEs is provided in Chapter 10 – Terrestrial Ecology (for angiosperms BQEs), Chapter 11 – Benthic Ecology (for invertebrate and macroalgal BQEs) and Chapter 12 – Fish, Shellfish and Turtle Ecology (for fish BQEs) of the EIAR.

Rosslare Harbour has maintained a GEP status in the two most recent assessment cycles. Accordingly, the alterations proposed by the Proposed Development must not cause deterioration in the status of these biological elements, or in the supporting conditions described in previous subsections.

5.3 RECREATIONAL WATERS (BATHING WATERS)

The Bathing Water Directive (2006/7/EC) came into force in March 2006 and was transposed into Irish law by the Bathing Water Quality Regulations, 2008, as amended. Bathing waters can be classified as 'Excellent', 'Good', 'Sufficient' or 'Poor', with 'Sufficient' being the minimum required status for Irish bathing waters (Table 5.4). Annually, bathing water quality for designated locations is assessed in Ireland by Local Authorities under Quality of Bathing Waters Regulations, 1992 (S.I 155 of 1992). Any 'Poor' bathing water requires a programme of adequate management measures to be implemented. A minimum of 16 samples are required for formal annual assessment.

Table 5.4: Assessment criteria for Bathing Waters

Parameter	Excellent	Good	Sufficient
E. coli (Freshwater)	500*	1000*	900**
E. coli (Coastal)	250*	500*	500**
Intestinal enterococci (freshwater)	200*	400*	330**
Intestinal enterococci (Coastal)	100*	200*	185**

(* based on 95-percentile value, ** based on 90-percentile value)

Rosslare Strand bathing water is located approximately 3km northwest of the Proposed Development. Based on the most recent bathing water publication (EPA, 2023), this bathing area is currently classified as having 'Excellent' water quality (Figure 5.11). All individual samples at Rosslare Strand for the 2024 monitoring seasons are shown as 'Excellent' in Table 5.5.

Table 5.5: Sampling status for EPA 2024 monitoring seasons

Sample Date	Rosslare Strand - Status
22/05/2024	Excellent
04/06/2024	Excellent
10/06/2024	Excellent
17/06/2024	Excellent
24/06/2024	Excellent
01/07/2024	Excellent
08/07/2024	Excellent
15/07/2024	Excellent
22/07/2024	Excellent
29/07/2024	Excellent
06/08/2024	Excellent
12/08/2024	Excellent
19/08/2024	Excellent
26/08/2024	Excellent
02/09/2024	Excellent

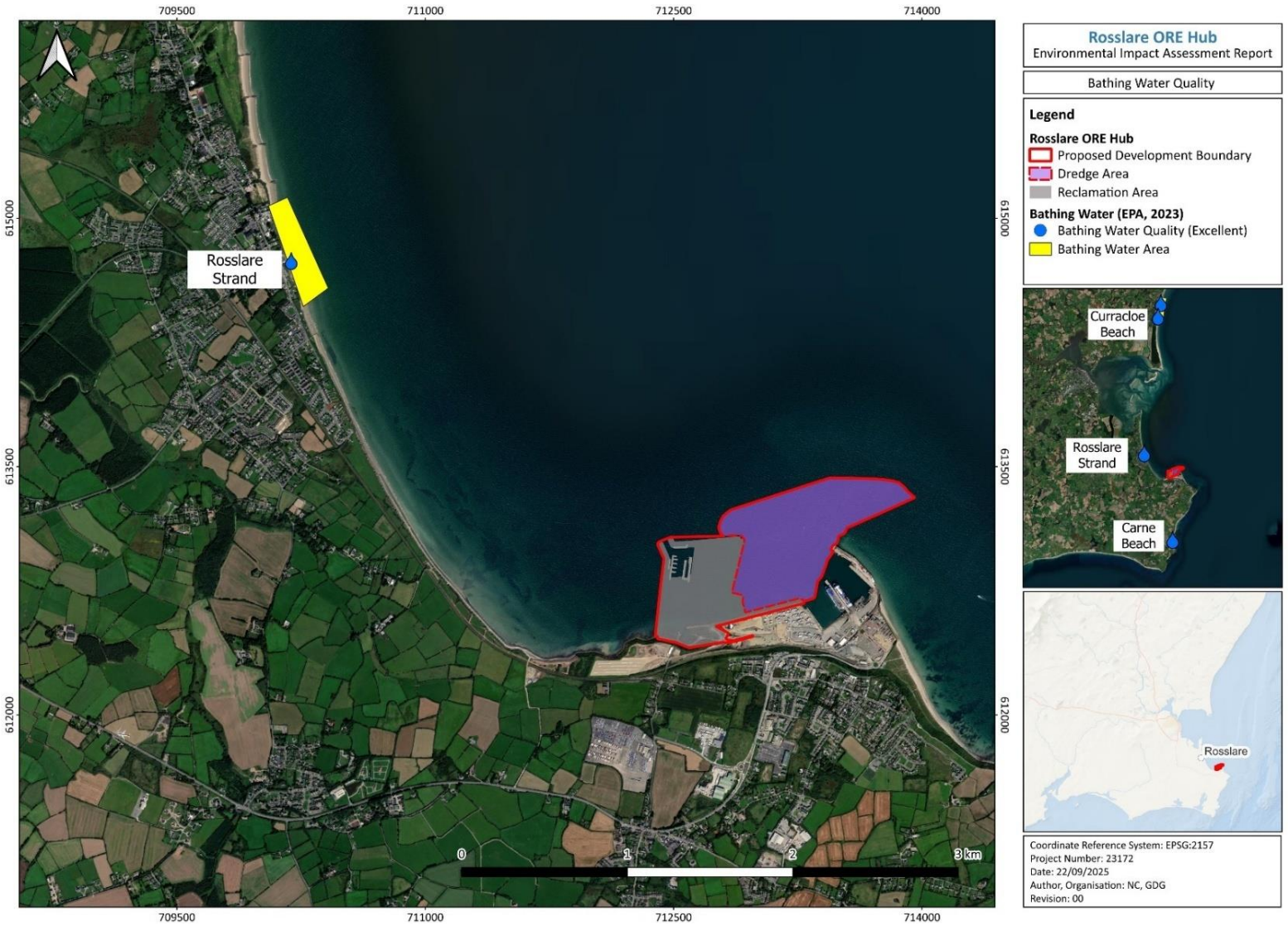

Figure 5.11: Bathing Water Quality (EPA, 2023)

5.4 URBAN WASTEWATER

Datasets of EPA Urban Wastewater licenced activities were screened as part of the assessment. Rosslare Harbour Wastewater Treatment Plant (WWTP), Reg. No. D0165, is located approximately 500m southwest of the Proposed Development.

This is an urban WWTP with an assigned subcategory agglomeration PE (population equivalent) of 2,001 to 10,000. The primary discharge points are:

- A stormwater overflow discharge located immediately southwest of the plant and discharges directly to the Milltown Roslare_010 watercourse; and
- The foul sewer main which discharges at the existing Europort Terminal facility.

A review of the Uisce Éireann annual environmental report (2023) for the WWTP notes the following:

- To date, six overflow events have been recorded at the WWTP. The current maximum hydraulic loading observed at the WWTP is 2,626 m^3/day, compared to the 'as constructed' peak capacity of 6,363 m^3/day;
- The WWTP discharge was compliant with the Emission Limit Values (ELV) set in the wastewater discharge licence;
- The discharge from the wastewater treatment plant does not have an observable impact on the water quality;
- The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status; and
- The discharge from the wastewater treatment plant does not have an observable impact on the coastal/transitional water quality.

Results from the national water ambient monitoring station at the Old Lagoon, Rosslare Harbour, meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations, 2009.

5.5 LICENSED ACTIVITIES

Datasets of EPA licenced activities including Integrated Pollution Control (IPC) sites, Industrial Emissions Licensing (IEL) facilities, and waste facilities were screened as part of the assessment (Figure 5.12 and Figure 5.13).

The closest licenced facility is the Bord Na Móna recycling waste facility (W0229-01) located approximately 1.4km to the southeast of the Proposed Development. This facility is located in the separate Kisha_SC_010 WFD subcatchment. There are no IPC and IEL facilities within 5km of the Proposed Development.

Given the distance and hydrological divide between the waste facility and Proposed Development, pollutants cannot feasibly be transmitted between them. Therefore, no licenced activities are likely to affect, or be affected by, the Proposed Development.

Figure 5.12: Integrated Pollution Control Locations (EPA, 2023)

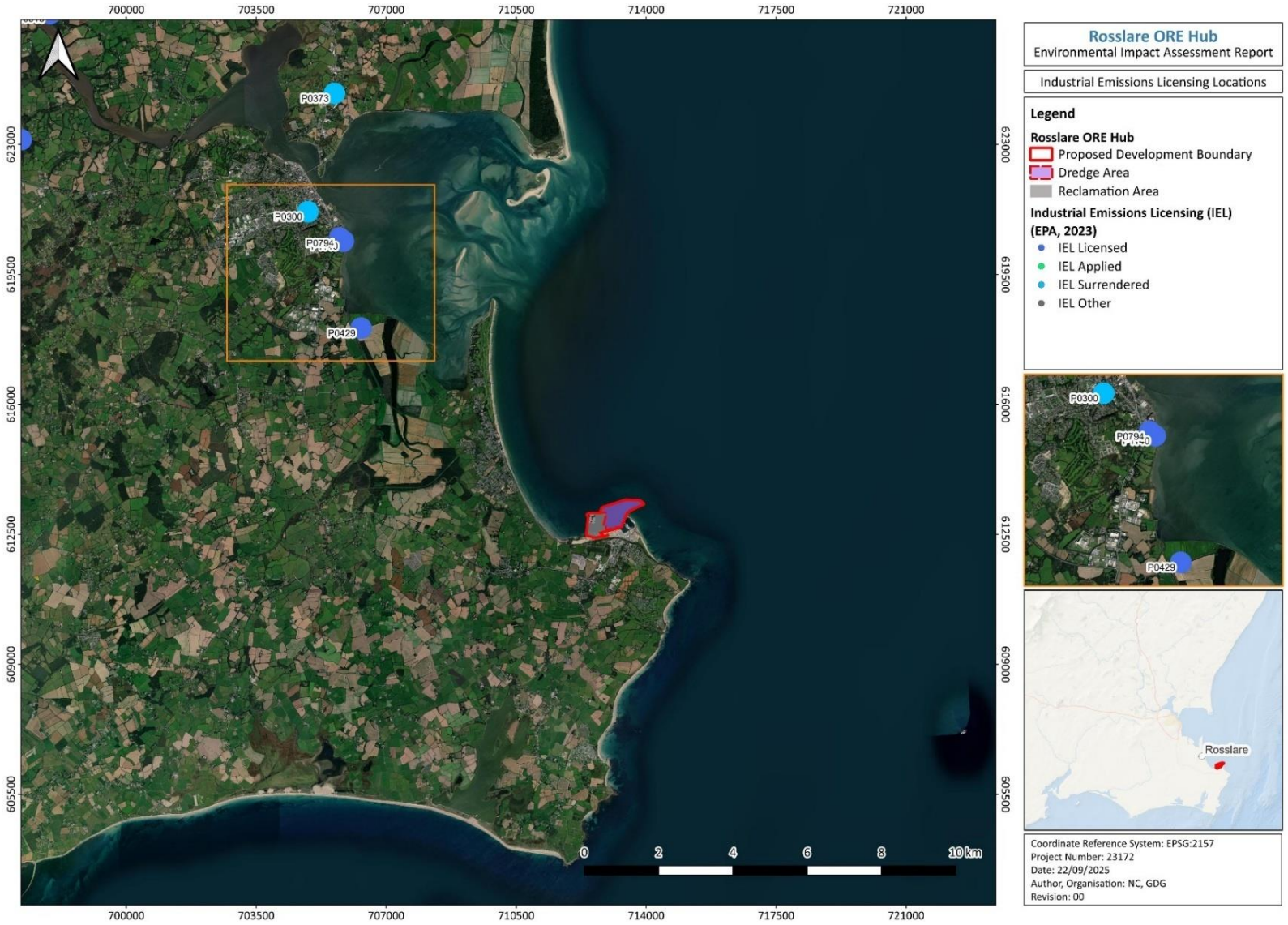

Figure 5.13: Industrial Emissions Licensing Locations (EPA, 2023)

5.6 MARINE WATER SAMPLING

Marine water sampling was undertaken to determine a baseline water chemistry within the water column of the Benthic Ecology study area. The rationale, locations, method and results are presented in the Benthic Ecology Technical Report, which accompanies Chapter 11 of the EIAR.

In short, surface water samples were collected at 15 stations throughout the Proposed Development survey area. Station locations and depth were recorded. Simultaneous with water sampling, in-situ readings of water temperature, conductivity, salinity and dissolved oxygen saturation were collected.

In-situ water sampling results are presented in Table 5.6. The results of the laboratory analysis are given in Table 5.7.

Results of marine water sampling are consistent across all monitoring locations and throughout the depth profile of the water column. Laboratory test results do not identify any concerning elevated concentrations when compared to key marine water quality indicators outlined in the EPA (2023) water quality report. For example, all samples fall within the threshold range for Phosphorous (<0.04 mg/l P), an important pollution indicator. As such, no sensitivities associated with coastal water body receptors have been identified within the marine chemistry baseline.

Table 5.6: In-situ water sampling data

Station No.	Sample ID	Easting (ITM)	Northing (ITM)	Time	Date	Depth (m)	Temp (°C)	Cond (mS/cm)	Sal (PSU)	DO (% Saturation)
1	1711053	713239	613001	14:03	15.2.2024	10.5	9.18	54.57	34.57	95.90
2	1711054	712787	612991	14:09	15.2.2024	5.7	8.94	54.57	34.63	95.60
3	1711055	712410	612976	14:16	15.2.2024	5.0	8.93	54.78	34.72	95.40
4	1711056	712023	613007	14:23	15.2.2024	4.3	9.02	54.44	34.67	95.60
5	1711057	712402	613189	14:30	15.2.2024	5.8	8.95	54.30	34.40	95.60
6	1711058	712985	613221	14:38	15.2.2024	5.3	8.98	54.70	34.73	96.00
7	1711059	713475	613244	14:46	15.2.2024	8.5	8.97	54.76	34.70	95.70
8	1711060	713368	613395	14:56	15.2.2024	9.7	9.04	54.75	34.69	96.00
9	1711061	712822	613384	15:02	15.2.2024	6.1	9.12	54.44	34.67	96.00
10	1711062	712221	613329	15:09	15.2.2024	5.3	9.10	54.67	34.67	95.00
11	1711063	712422	613607	15:19	15.2.2024	6.1	9.10	54.70	34.68	96.10
12	1711064	713191	613614	15:26	15.2.2024	6.2	9.05	54.64	34.56	96.20
13	1711065	713600	613510	15:34	15.2.2024	9.2	9.07	54.71	34.68	96.50
14	1711066	713022	612796	15:40	15.2.2024	3.7	9.21	54.48	34.60	96.70
15	1711067	713198	612805	15:48	15.2.2024	7.0	9.15	54.51	34.60	96.00

Table 5.7: Water sampling laboratory test results and relevant WFD threshold values

Sample No.	Report No.	Receipt Date	Sample ID	Salinity	Dissolved Oxygen (%)	DOC	Depth	Conductivity (field measurement)	Alkalinity Total by Autotitration	Temperature (at lab)	Phosphate as P filtered (low level SW or saline)	Nitrate as N saline waters Calculated	Nitrite as N saline waters	Ammonia as N (saline water)	Silica, reactive as Si	TON as N saline waters	DIC (Dissolved Carbon DC - DOC)	DC (dissolved Carbon)
				ppt	%Sat	mg/l	m	uS/cm	mg/l CaCO3	°C	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
1711053	548348	19/02/24	1 @14.03(713239, 613001) 14.03	33.0	95.9	1.3	10.5	54.57	112	17.9	0.021	0.245	0.003	<0.010	0.245	0.248	27.2	28.5
1711054	548349	19/02/24	2 @14.09 (712787, 612991)	33.2	95.6	1.17	5.7	54.57	110	17.9	0.023	0.24	0.004	0.01	0.244	0.244	27.9	29.1
1711055	548350	19/02/24	3 @14.16 (712410, 612976)	33.1	95.4	1.37	5.0	54.78	109	17.9	0.023	0.248	0.004	0.011	0.255	0.252	27.4	28.8
1711056	548351	19/02/24	4 @14.23 (712023, 613007)	32.9	95.6	1.05	4.3	54.44	112	17.8	0.022	0.244	0.004	0.031	0.248	0.248	25.3	26.4
1711057	548352	19/02/24	5 @14.30(712402, 613189)	33.2	95.6	1.08	5.8	54.30	115	17.8	0.022	0.257	0.003	<0.010	0.253	0.26	26.5	27.6
1711058	548353	19/02/24	6 @14.38(712985, 613221)	33.2	96	1.04	5.3	54.70	110	17.8	0.021	0.245	0.003	0.013	0.245	0.248	26.8	27.8
1711059	548354	19/02/24	7@ 14.46(713475, 613244)	33.3	95.7	<1	8.5	54.76	118	17.9	0.025	0.244	0.004	<0.010	0.256	0.248	27.1	28.1
1711060	548355	19/02/24	8 @14.56(713368, 613395)	33.4	96	1.12	9.7	54.75	112	17.9	0.024	0.241	0.003	<0.010	0.243	0.244	27.2	28.3
1711061	548356	19/02/24	9 @15.02(712822, 613384)	33.2	96	1.03	6.1	54.44	117	17.9	0.025	0.252	0.004	<0.010	0.236	0.256	27	28

Sample No.	Report No.	Receipt Date	Sample ID	Salinity	Dissolved Oxygen (%)	DOC	Depth	Conductivity (field measurement)	Alkalinity Total by Autotitration	Temperature (at lab)	Phosphate as P filtered (low level SW or saline)	Nitrate as N saline waters Calculated	Nitrite as N saline waters	Ammonia as N (saline water)	Silica, reactive as Si	TON as N saline waters	DIC (Dissolved Carbon DC - DOC)	DC (dissolved Carbon)
				ppt	%Sat	mg/l	m	uS/cm	mg/l CaCO3	°C	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
1711062	548357	19/02/24	10 @15.09(712221, 613329)	33.2	95	<1	5.3	54.67	109	18.0	0.025	0.248	0.004	0.01	0.238	0.252	26.8	27.8
1711063	548358	19/02/24	11 @15.19(712422, 613607)	33.2	96.1	<1	6.1	54.70	111	18.0	0.023	0.252	0.004	<0.010	0.242	0.256	27.4	28.4
1711064	548359	19/02/24	12 @15.26(713191, 613614)	33.6	96.2	1.03	6.2	54.64	114	18.0	0.023	0.26	0.004	<0.010	0.24	0.264	26.8	27.9
1711065	548360	19/02/24	13 @15.34(713600, 613510)	33.3	96.5	1.05	9.2	54.71	117	17.9	0.024	0.248	0.004	0.01	0.236	0.252	26.5	27.5
1711066	548361	19/02/24	14 @15.40(713022, 612796)	33.2	96.7	1.28	3.7	54.48	114	17.9	0.024	0.248	0.004	0.015	0.242	0.252	26.4	27.7
1711067	548362	19/02/24	15 @1548(713198, 612805)	33.2	96	1.2	7.0	54.51	113	17.8	0.026	0.268	0.004	0.015	0.271	0.272	27.2	28.4
Threshold (EPA/WFD Coastal/Transitional)				-	>80%	-	-	-	-	-	0.06	1.7	0.07	0.3	-	1.8	-	-

5.7 PROTECTED AREAS

Impacts of the Proposed Development on European sites (i.e., Special Areas of Conservation designated under the Habitats Directive and Special Protection Areas designated under the Birds Directive) which are potentially hydraulically linked to the Proposed Development are assessed in the Screening for Appropriate Assessment Report and Natura Impact Statement which accompany this planning application and as such are not considered further here. For completeness, the adjacent protected areas are provided in Figure 5.14.

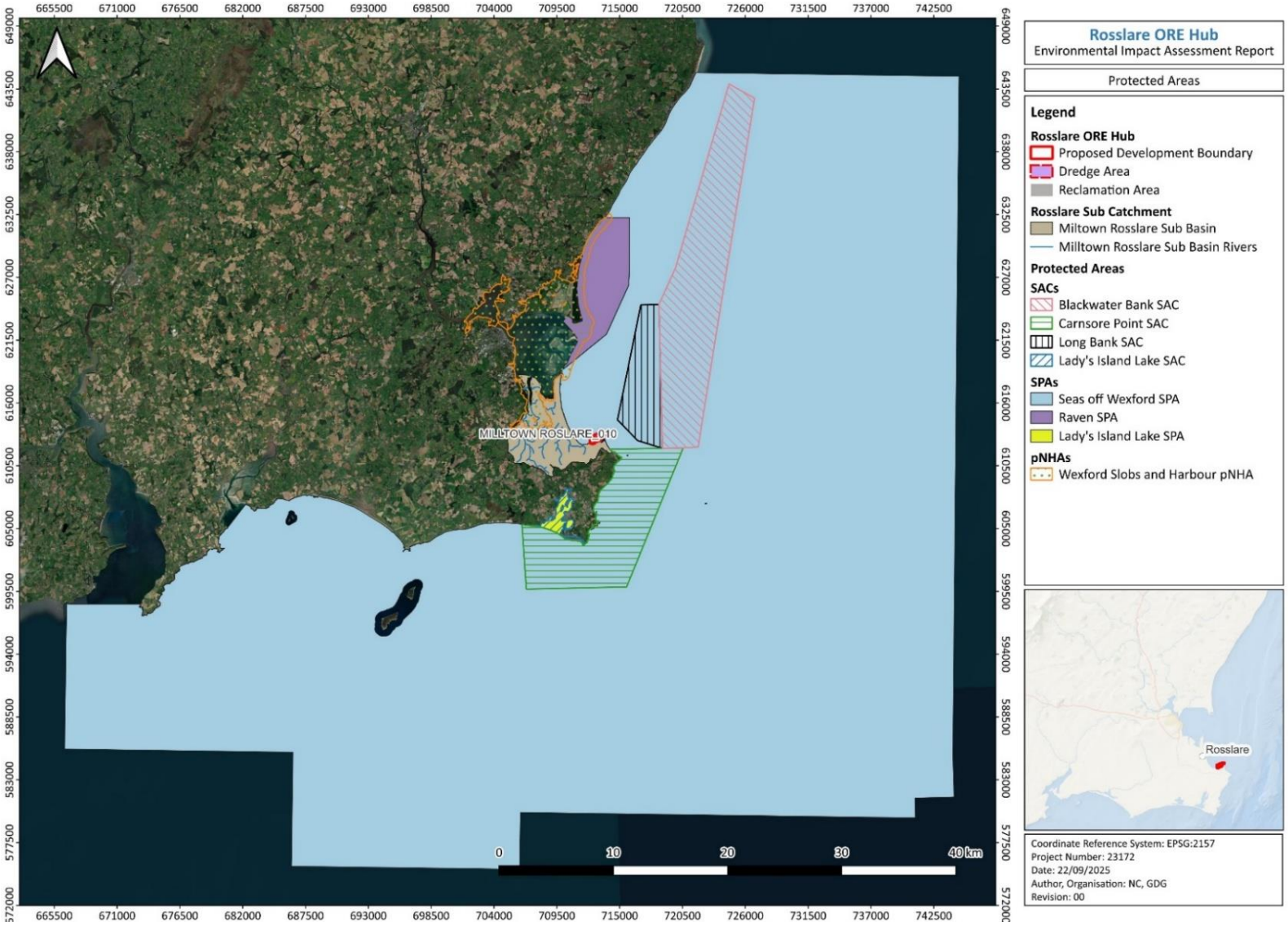

Figure 5.14: Protected Areas adjacent to the Proposed Development (NPWS, 2024)

5.8 DESIGNATED HABITATS

5.8.1 NATURAL HERITAGE AREAS

There are no Natural Heritage Areas (NHAs) that are hydraulically linked to the Proposed Development. There is one proposed NHA (pNHA) which is potentially hydraulically linked to the Proposed Development, the Wexford Slobs and Harbour pNHA, located approximately 2.5km west of the Proposed Development and comprises the entire Milltown Roslare_010 river water body downstream of Rosslare Town.

5.8.2 SALMONID WATERS

There are no water bodies within the ZoI which are designated as Salmonid waters in accordance with the Salmonid Regulations (S.I. 293 / 1988). The closest such watercourse is the River Slaney which is designated as a Salmonid water upstream of Edermine Bridge (approximately 2km south of Enniscorthy). This is hydrologically upgradient of the Proposed Development and is not considered further.

5.8.3 SHELLFISH WATERS

Shellfish areas are identified under the Shellfish Water Directive (2006/113/EC) of the European Parliament and of the Council of 12 December 2006 on the quality required of shellfish waters. The nearest designated shellfish area is the Wexford Harbour Outer, located approximately 7.5km northwest of the Proposed Development.

5.8.4 NUTRIENT SENSITIVE WATERS

The Urban Waste Water Treatment Regulations 2001, as amended (which transpose the Urban Wastewater Treatment Directive (91/271/EEC) into Irish law and update the Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations 1994, as amended) list nutrient sensitive waters in the Third Schedule.

The Proposed Development does not directly overlap with any water bodies designated as nutrient sensitive areas. The closest nutrient sensitive area is the Wexford Harbour coastal water body which is located approximately 7.5km northwest of the Proposed Development (Figure 5.15). The Slaney Estuary Lower is also designated as a nutrient sensitive area and catchment of interest but is hydrologically upgradient of the Proposed Development and is not considered further.

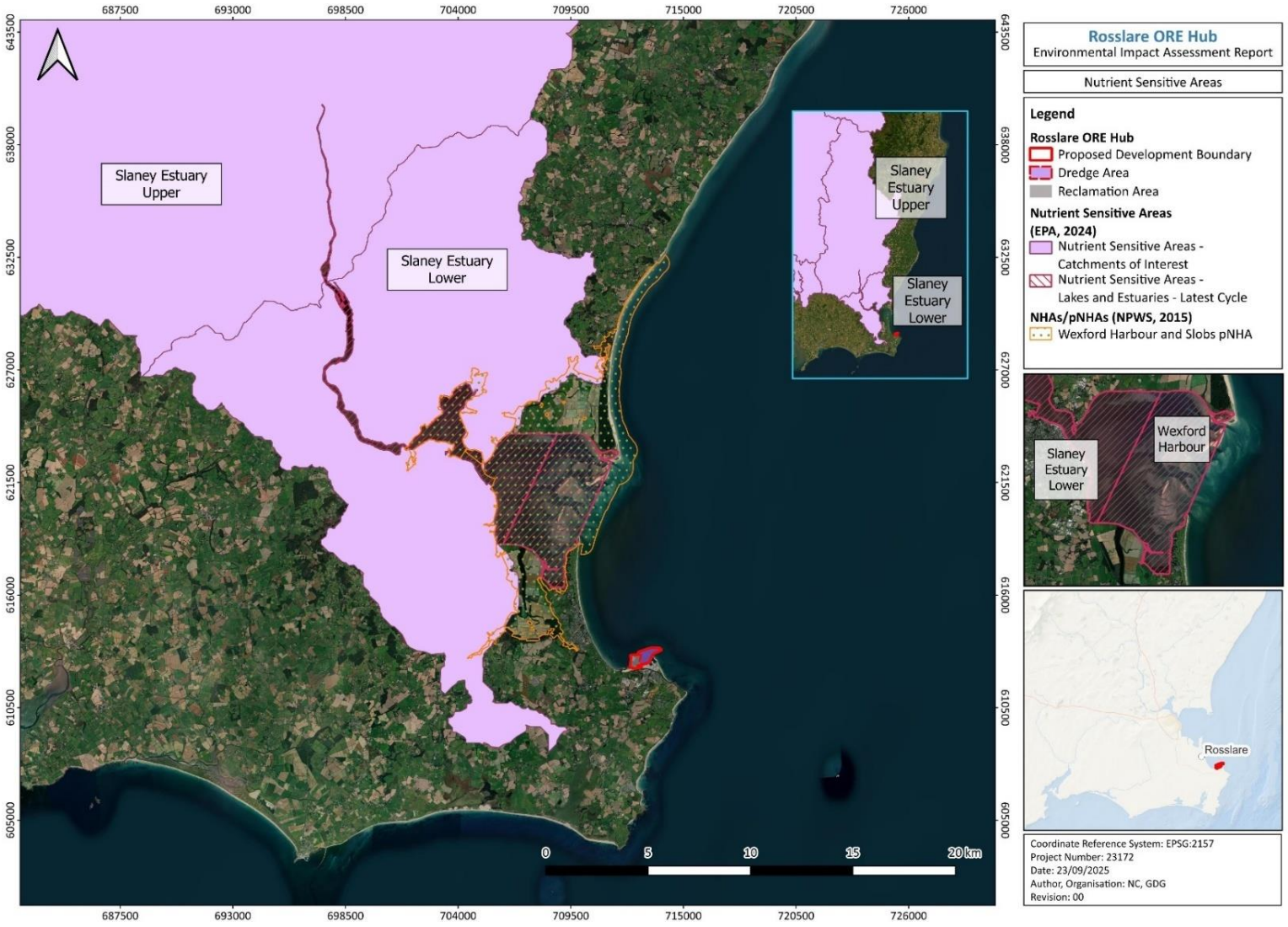

Figure 5.15: Nutrient Sensitive Areas

6 WFD ASSESSMENT

6.1 STAGE 1: SCREENING

In accordance with planning guidance (Planning Inspectorate, 2017), the Proposed Development has been screened for WFD compliance on the basis of the source-pathway-receptor (S-P-R) risk assessment methodology.

Source – Typically a pollutant/contaminant or impact having activity that could potentially have an effect on the receiving water body. In this case the source to be investigated is the Proposed Development and the nature of the works that are associated with its development, as there is potential to create impact on the water bodies named in Section 5.

Pathway – A route by which a source of contamination or potential negative impact could affect the water body. The Proposed Development is taking place within coastal and transitional water bodies and thus there is a direct pathway, as well as via runoff and ground ingress a pathway to landward water body receptors.

Receptor – Something that could be negatively impacted by the Proposed Development. This refers to the individual contributing elements of the WFD status such as chemical status, physicochemical and hydromorphological supporting conditions and the biological elements.

Based on implementation of the above S-P-R risk methodology, the Proposed Development has potential S-P-R connections to water bodies and has been screened in for WFD Assessment and may progress to Stage 2: Scoping.

6.2 STAGE 2: SCOPING

This section summarises the potential impacts associated with the Proposed Development. Each of the risks to receptor groups are considered.

6.2.1 PROJECT DESIGN PARAMETERS

A detailed Project Description is provided in Chapter 6 of the EIAR and has been used to inform the main construction and operation elements of the Proposed Development, as summarised in Section 4 of this report. Table 6.1 outlines the project design parameters that have been used to inform the assessment of potential impacts on the environmental objectives of the WFD water bodies.

6.2.1.1 CONSTRUCTION PHASE

Temporary impacts on water quality have the potential to occur during the construction phase of the works. The principal potential sources of water quality impact which may arise during construction works include:

- Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column during activities such as demolition of buildings and structures, construction/upgrading of access roads, construction of rock armour revetment and placement of breakwater armour units, land reclamation and infill, piling, dredging and material dispersal, temporary site establishment, and excavations and earthworks.

- Release of highly alkaline contaminants to water column from concrete and cement works during the demolition of buildings and structures, temporary site establishment, quayside wall and berth construction, hard landscaping and surfacing, and general concrete works.
- General water quality effects associated with construction plant, maritime vessels, equipment and storage of materials, such as pollution of watercourses or water bodies from accidental fuel or chemical compound leakages, or poor practices regarding other liquids on-site such as wastewater associated with temporary site facilities.
- Increased potential for fluvial flooding due to creation of preferential pathway for runoff during construction and upgrading of access roads, and earthworks and excavations.
- Increased risk of pluvial flooding due to increase in impermeable surfaces that contribute greater proportions of surface water run-off from hardstanding areas.

6.2.1.2 OPERATIONAL PHASE

The operational phase impacts associated with the ORE Hub represents an increase in port activities and associated potential for impact on water quality. It is noted that the operational impacts associated with normal day-to-day port activities are currently managed by the existing operational and maintenance procedures outlined within Rosslare Europort's Local Port Services (LPS) Manual. The LPS Manual will be updated to include all new infrastructure within the Proposed Development.

The principal water quality impacts from the operational phase include:

- Increased suspended sediment levels due to port operations including number and size of vessels and ongoing maintenance dredging and associated sediment dispersal to facilitate maritime access.
- Changes in water quality arising from contaminants percolating through the permeable stone-fill used to construct the ORE storage yard and into sensitive water bodies.
- Changes in water quality associated with maritime vessels, LoLo and RoRo activities, and on-land operations, including the temporary storage of renewables components, oils, fuels, and chemicals.
- Changes in water quality resulting from wastewater releases associated with the operation and maintenance of surface water and foul drainage systems.
- Changes in water quality resulting from surface water drainage installed in RoRo hardstand areas and the reconfigured road network facilitating potential pathways for a wide range of contaminants arising from general port operations to water bodies.
- Increased potential for fluvial flooding due to creation of preferential pathway for runoff via access roads.
- Increased risk of pluvial flooding due to impermeable surfaces that contribute greater proportions of surface water run-off from hardstanding areas.
- Increased risk of coastal flooding due to tidal inundation and long-term changes in sea level associated with climate change.

In addition to an increase in regular port activities and the potential impacts to water quality, there is potential for hydromorphological impacts associated with the operation of quayside structures. These impacts have been assessed based on the hydrodynamic modelling outlined in Chapter 8 – Coastal Processes in the EIAR and are assessed further in the context of the designation of Rosslare Harbour as a HMWB with a specified use of 'Port Operations'.

Table 6.1: Project design parameters for potential impacts assessed in WFD Assessment

Potential Impact	Project Design Parameters	Justification
Construction Phase		
Suspended Sediment and Sedimentation - Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column	**Demolition of buildings and structures:** Decommissioning and removal of minor existing structures such as the sheds, steel plinths and anchors in the Small Boat Harbour are required to facilitate the construction of the new port facilities. This will include a small extent of localised breaking out of concrete using a rock breaker mounted on an excavator.	Surface water quality could also be impacted during the site clearance works through the generation of sediment plumes during site clearance by exposing soils/rubble to erosion by rainwater and entrainment of sediment within drainage water run-off from the site.
	Construction/upgrading of access roads: Upgrades to internal road infrastructure and construction to the north side of the new access facility (where the replacement small boat harbour will be located).	Construction works can give rise to mobilisation and release of sediments during excavation and exposure of unprotected soils, stockpiling, and the construction of road infrastructure and active travel link. This could potentially result in an increase in suspended sediment concentrations in run-off to water bodies from the site.
	Construction of rock armour revetment and placement of breakwater armour units: The rock armour revetments will be installed and breakwater armour united and placed in-situ. These will partially surround the reclaimed area and provide the boundary protection for the proposed small boat harbour. They will be designed to minimise effects to the existing wave climate and local hydrodynamic regime. It is expected that the construction of revetments will take place relatively early on in the works to allow for the dredging and associated filling (reclamation) activities to commence.	Surface water quality could also be impacted during the construction process for rock armour revetments and breakwater armours which may cause temporary suspension and release of sediments within the water column.
	Land reclamation and infill: Reclamation will consist of 27.7 ha total area, including an existing small boat harbour, for the development of a storage and assembly area which will accommodate the daily function and activities of the ORE Hub. A phased approach is anticipated to infilling and reclamation,	Surface water quality could also be impacted due to the dispersion of dredged material during the reclamation process which may cause temporary suspension and release of sediments within the water column.

Potential Impact	Project Design Parameters	Justification
	consisting of imported rockfill placed along the boundary and dredged soil that will be dozed or moved by excavator and dumper into the remaining reclamation zone through sequenced placement of the dredged infill.	
	Piling and blasting activities: Piling works are required to construct the two main ORE quays as well as provide facilities in the small boat harbour for fishing quay, berths and pontoon restraints. Pile installation operations include tubular steel piling, infill sheet piles and combi wall piling at the ORE Berths, and steel sheet piling at the small boat harbour, CTV berths and pontoon restraints. Sheet piling will also be used to reinforce the existing foul sewer main at ORE Berth 2, which will otherwise remain unchanged. Small scale blasting may be required to facilitate the short lengths of driven sheet piles to connect between the main bearing piles during quay construction.	Pile installation operations, including blasting, have the potential to cause a temporary increase in suspended sediment due to disturbance of the riverbed materials causing the resuspension of sediments in the water column leading to localised reduction in water quality. Underwater Noise generated during construction from piling and blasting activities on fisheries also has the potential to elicit temporary behavioural changes or displacement in sensitive fish species, affecting biological supporting elements to water body status.
	Dredging and material dispersal: Dredging will be carried out to achieve water depths of -12 metres Chart Datum (mCD) in the berth pockets and -10 mCD in the approach channel. The total dredged volume, considering over-dredged allowances, is approximately 1,400,000m^3. As such, significant amounts of dredge material will be removed and deposited during dredging activities and therefore have the potential to negatively impact the water column if not mitigated appropriately.	The dispersion of dredged material will occur during the dredging works. Therefore, initial dredging works will cause temporary suspension and release of sediments at the loading sites and dumping/dispersal of sediments will also give rise to temporary sediment plumes. A full description of the potential extent, distribution and concentration of dispersed dredged material is available in Technical Appendix 8 of the EIAR.
	Excavations and earthworks: A small extent of excavation around the northern side of the cliff face adjacent to the small boat harbour is required to tie-in with the infilled levels from reclamation. General earthworks will be required to re-handle dredged spoil as it is deposited into the reclamation lagoons. This material will be re-handled by bulldozers and wide tracked excavators. Dynamic compaction techniques will be used to aid	Surface water quality could also be impacted during excavation and earthworks activities which have the potential to generate increased suspended sediment levels from sediment runoff during soil stripping and topsoil removal.

Potential Impact	Project Design Parameters	Justification
	the consolidation process in the reclamation area. Band drains will be installed from ground level to allow embedded water to escape strata.	
	Temporary site establishment: A temporary site compound will be constructed close to the eastern edge of the existing small boat harbour. The compound shall comprise 8-10 temporary office mobile buildings, welfare facilities, canteen and small equipment storage. Each building shall be erected for the duration of the construction works and removed thereafter.	Surface water quality could also be impacted during the intrusive works through the generation of sediment plumes and entrainment of sediment within drainage water run-off from the site.
Concrete and cement pollution - Release of highly alkaline contaminants to water column from concrete and cement works	**Demolition of buildings and structures:** Decommissioning and removal of minor existing structures such as the sheds, steel plinths and anchors in the Small Boat Harbour are required to facilitate the construction of the new port facilities. This will include a small extent of localised breaking out of concrete using a rock breaker mounted on an excavator.	These activities have the potential to generate highly alkaline dust, which in absence of mitigation may find its way into the water column. Such high alkalinity contaminants can have lethal (direct mortality through toxicity) and sub-lethal (reduced respiration, growth, reproduction) effects on biotic receptors such as fish, invertebrates, and their habitats.
	Temporary site establishment: A temporary site compound will be constructed close to the eastern edge of the existing small boat harbour. The compound shall comprise 8-10 temporary office mobile buildings, welfare facilities, canteen and small equipment storage. Each building shall be erected for the duration of the construction works and removed thereafter.	Construction will include potential for generation of sediment runoff during intrusive works, wastewater associated with welfare facilities (water and foul connections) and cement pollution from heavy concrete blocks used in fencing.
	Quayside wall and berth construction: The Proposed Development will include the construction of two ORE berths. A significant amount of concrete works is required at ORE 1 and ORE 2 berths as they are constructed from a suspended concrete deck resting on tubular steel piles filled with concrete. The open piled quay structures will comprise a composite concrete deck slab (precast and in situ concrete elements) which will be supported on steel tubular piles installed in a grid pattern. ORE Berth 1 will also include a revetment. Concrete will be poured in-	These activities have the potential to generate large volumes of fresh concrete and cement which is highly alkaline and therefore will affect water quality (particularly in terms of pH) if washed into the adjacent water body.

Potential Impact	Project Design Parameters	Justification
	situ during construction. Precast structures will be filled with reinforced concrete. Steel combi-walls will have concrete capping beams and any cofferdam voids be filled with reinforced concrete.	
	Hard landscaping and surfacing: Hard landscaping and surfacing will be required on-site, for example surfacing of the port storage yard after reclamation and berth construction. An increase in the area of impermeable surfaces may contribute to increased proportions of surface water run-off and pluvial flooding within hardstanding areas of the Proposed Development, in the absence of appropriate mitigation through drainage.	The use of fresh concrete and cement may produce runoff which is highly alkaline and therefore will affect water quality if washed into the adjacent water body.
General Construction Activities - water quality effects associated with pollution of watercourses or water bodies from accidental fuel or chemical compound leakages, or wastewater	The construction works will involve the use of construction machinery, equipment and maritime vehicle movement. This may cause the pollution of watercourses or water bodies from accidental fuel or chemical compound leakages and sediment compaction/dispersal.	During the construction phase there is the potential for water quality effects associated with construction plant, maritime vessels, equipment and storage of materials, such as pollution of watercourses or water bodies from accidental fuel or chemical compound leakages, or poor practices regarding other liquids on-site such as wastewater associated with temporary site facilities. Whilst proposed site compounds will not be sited immediately adjacent to the water body there is the potential for contaminants to drain into coastal water bodies in the absence of mitigation.
Operation Phase		
General Operational Activities	**Foul Water:** The development will be serviced by a dedicated foul water Network. Foul water will be pumped into a pressure main, along the new access road, away from the new ORE development area to the existing foul pumping station at Terminal 7, currently	The projected loading at Rosslare WWTP will not be significant in the context of overall loading to the agglomeration and there is adequate capacity available for any additional load.

Potential Impact	Project Design Parameters	Justification
	under the control of Iarnród Éireann. From there, the foul water flows westwards by gravity towards the Rosslare WWTP in Uisce Éireann pipework for treatment and disposal via foul sewer outfall point at the existing Europort Terminal facility.	
	Surface Water Drains: Surface water drains installed in new hardstand areas and reconfigured road network will have the potential to provide pathways for contaminants arising from general port operations to the receiving environment.	Pollutants derived from spillages, vehicle operation, atmospheric deposition, erosional losses and leakages. The main potential pollutants from surface water drainage or direct run-off are entrained sediment, hydrocarbons, and trace contaminants, including metals.
	Firewater System: A fire-water storage tank with capacity of 180m³ storage, specified to have a 1mm EPDM internal liner and be permanently connected to a 100mm diameter fire water mains with hydrant outlets distributed around the Proposed Development. Potential to provide additional run-off and subsequent entrainment of contaminants into the planned drainage system during an incident.	Pollutants derived from fire-water storage tank and additional run-off related pollutants derived from spillages, vehicle operation, atmospheric deposition, erosional losses and leakages. The main potential pollutants from surface water drainage or direct run-off are entrained sediment, hydrocarbons, and trace contaminants, including metals.
Suspended Sediment and Sedimentation - Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column	The new facilities will increase the number of larger vessels that use Rosslare Harbour. Maintenance dredging will be required to maintain the established charted depth of navigation channels, manoeuvring areas (including the turning circle), and the operational depths of the berthing pockets. It is noted that the maintenance dredging will be licenced in a separate process to this planning application.	The dispersion of dredged material will occur during maintenance dredging works. Therefore, regular dredging works will cause continual episodes of suspension and release of sediments at the loading sites and dumping/dispersal of sediments will also give rise to sediment plumes within the water column.
Drainage of ORE storage yard - General effects on water quality arising from contaminants	The ORE yard is expected to consolidate after construction as the reclaimed dredged spoil becomes compacted and consolidates over time through use of band drains and with surcharge loading. Thus, it is inappropriate to lay surfacing until the greater part of the consolidation has occurred.	This process may take several years and until any optional future surfacing is laid, there is potential for effects on water quality arising from contaminants percolating through the permeable stone-fill used to

Potential Impact	Project Design Parameters	Justification
percolating through the permeable stone-fill		construct the ORE storage yard and into sensitive water bodies.
Potentially polluting activities - Effects on water quality associated with pollution of watercourses or water bodies from accidental fuel or chemical compound leakages.	The ongoing operation of the port will involve the use of vehicle movement, machinery associated with landside works, LoLo and RoRo activities, and high traffic of maritime vessels. Ongoing use of machinery, equipment and maritime vehicle movement. This may cause the pollution of watercourses or water bodies from accidental fuel or chemical compound leakages and sediment compaction/dispersal.	There is the potential for water quality effects associated with construction plant, maritime vessels, renewables components, equipment and storage of materials, such as pollution of watercourses or water bodies from accidental fuel or chemical compound leakages.
Wastewater - General effects on water quality associated with wastewater releases	A wastewater and foul drainage system will be incorporated into the Proposed Development to convey surface water and foul water captured in the development footprint to an outfall point.	Potential effects on water quality due to wastewater releases to water bodies.
Run-off pollution - Potential pathways for contaminants into water bodies via surface water drainage and reconfigured road network	The reconfigured road network may also provide potential pathways for a wide range of contaminants arising from general port operations which could negatively impact water quality.	Potential effects due to surface water drains installed in new hardstand areas providing potential pathways for a wide range of contaminants arising from general port operations.
Fluvial flooding - Increased potential for fluvial flooding due to creation of preferential pathway for runoff	There is increased potential for fluvial flooding due to the creation of preferential pathway for runoff within the impermeable access roads and tracks network within the Proposed Development.	This could generate increased volumes of overland flow during periods of high rainfall intensity and storm events. The reconfigured road network may also provide potential pathways for a wide range of contaminants arising from general port operations which could negatively impact water quality. The

Potential Impact	Project Design Parameters	Justification
		surface water drainage network has been designed to accommodate run-off generated from the road network and therefore minimise risk of contribution to fluvial flooding.
Pluvial flooding - Increased risk of pluvial flooding due to impermeable surfaces that contribute greater proportions of surface water run-off	Use of impermeable surfaces may contribute to increased proportions of surface water run-off and pluvial flooding within hardstanding areas of the Proposed Development.	Increased surface area of impermeable surfacing could generate increased volumes of overland flow during periods of high rainfall intensity and storm events, in the absence of appropriate mitigation through drainage.
• **Coastal inundation** - Increased risk of coastal flooding due to tidal inundation and long-term changes in sea level associated with climate change.	There is a long-term risk during the operational period of the Proposed Development associated with an increased risk of coastal flooding due to tidal inundation and long-term changes in sea level associated with climate change.	Potentially negative effect on port operations should sections of the facility become inundated during tidal surges from storm events. In addition, the effects of potential sea level rises may affect the viability of daily operations at the Proposed Development.
• **Hydromorphology -** Changes in the hydromorphological supporting conditions through habitat alterations impacting on ecological status	Rosslare Harbour has been designated a HMWB with a specified use pf 'Port Navigations', which acknowledges that the water body has been physically altered. As a result, all further physical modifications caused by the specified use must be mitigated against as far as reasonably possible, in order to prevent deterioration of the water body status.	A review of the relevant topic chapters, contained within the EIAR, identifies that the algal, fish and benthic invertebrate communities (biological elements of Ecological status) have the potential to be affected by hydromorphological alterations associated with the Proposed Development.

6.2.2 SCOPING SUMMARY

A review of the potential impacts for each construction and operational activity has been used to inform which activities are scoped into Stage 3: Impact Assessment.

In order to assess WFD compliance, links between the Proposed Development and all WFD Status quality elements that could be affected have been identified to ensure the scoping phase has considered where water body status, or objectives, could be affected by the proposed activities and where possible casual links exist between a quality element and an activity. Table 6.2 provides a summary of all scoping considerations undertaken as part of the assessment.

Table 6.2: Potential impacts associated with the Proposed Development and outcome of scoping assessment for the WFD compliance assessment for water bodies in the WFD study area

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
Construction Phase								
Suspended Sediment and Sedimentation - Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column	**Scoped In:** **Fish**: Increased turbidity can cause gill abrasion, reduce feeding efficiency, and disrupt migratory behaviour (Wenger et al., 2017; Popper et al., 2014). **Invertebrates**: Deposition may smother benthic invertebrates, particularly sessile and filter-feeding taxa; resuspension may affect community structure. **Macrophytes**; Reduced light penetration from increased turbidity may inhibit photosynthesis, particularly in submerged macrophyte communities.			**Scoped In:** Sedimentation/sediment deposition can have impacts on the morphology of coastlines and supporting hydromorphic conditions.		**Scoped In:** Suspended sediment in the water column and sediment deposition on the seabed/coastline can impact on oxygenation, nutrient availability and temperature of water bodies.	**Scoped In:** Suspended sediments may include priority contaminants entrained within run-off which are subsequently introduced to the water column and impact quality of water bodies.	
Concrete and cement pollution - Release of highly alkaline contaminants to water column from concrete and cement works	**Scoped In:** **Fish**: Alkaline leachate from concreate could cause acute or sub-lethal effects on fish, particularly during wet pours or accidental washout releases. Effects are expected to be highly localised and short-term if mitigation is applied. **Invertebrates**: Localised pH elevation from cement leachate or washout could result in temporary reduction in benthic invertebrate			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped In:** Highly alkaline concrete and cement substances may impact water quality (for example pH) if	**Scoped Out:** There is no significant potential for priority or priority hazardous substances from the release of alkaline contaminants to the water column.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
	diversity, particularly in low-energy areas like the Small Boat Harbour. Effective containment and curing practices should prevent WFD status deterioration. **Scoped Out:** **Macrophytes**: No WFD-relevant macrophyte habitats (e.g., *Zostera*, *Fucales*) exist in proximity to construction zones where concrete works will occur.					introduced to the water column.		
General Construction activities - water quality effects associated with pollution of watercourses or water bodies from accidental fuel or chemical compound leakages, or wastewater	**Scoped In:** **Fish**: Accidental discharges could result in acute toxicity to fish; hydrocarbon exposure can impair physiological functions. **Invertebrates**: Hydrocarbon and chemical exposure can be toxic to macroinvertebrate communities and reduce diversity. **Macrophytes**? Chemical contamination may affect macrophyte growth or survival, especially submerged taxa.			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped In:** Potential pollution of watercourses or water bodies from accidental fuel or chemical compound leakages, or wastewater.	**Scoped In:** Potential introduction of priority or priority hazardous substances to watercourses or water bodies from accidental fuel or chemical compound leakages, or wastewater.	
Underwater Noise generated during construction – from Piling and Blasting activities	**Scoped In:** **Fish**: Exposure to impulsive noise from impact piling or blasting may lead to temporary threshold shifts (TTS), startle responses, or displacement.			**Scoped Out:** These activities will not alter sediment transport or morphology at the water body scale.		**Scoped Out:** These activities will not alter sediment transport or	**Scoped Out:** These activities will not alter sediment transport or morphology at the water body scale.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
	PTS is unlikely due to spatial buffering and bunded enclosures. **Scoped Out:** **Invertebrates**; Invertebrates have no known sensitivity to acoustic disturbance. **Macrophytes**; Macrophytes have no known sensitivity to acoustic disturbance.					morphology at the water body scale.		
Operation Phase								
General Operational Activities	**Scoped In:** **Fish**: Contaminants in surface runoff may impair fish health and reproductive success, or cause avoidance of affected areas. **Invertebrates**: Hydrocarbons or heavy metals in runoff may reduce invertebrate diversity or alter community structure. **Macrophytes**: Nutrient-rich runoff may lead to eutrophication, promoting algal overgrowth and displacing native macrophyte communities.			**Scoped Out:** The surface water drainage system will have outfalls which discharge to Rosslare Harbour and the Southwestern Irish Sea, and these are not anticipated to introduce new hydromorphological pressures.		**Scoped In:** Surface water drains installed in new hardstand areas and the reconfigured road network have potential to provide pathways and introduce contaminants arising from general port operations which can impact on oxygenation, nutrient	**Scoped In:** Surface water drains installed in new hardstand areas and the reconfigured road network have the potential to provide pathways and introduce priority and priority hazardous substances to the water column and impact quality of water bodies.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
						availability and temperature of water bodies.		
Suspended Sediment and Sedimentation - Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column	**Scoped In:** **Fish**: Dredging plumes may affect fish through turbidity increases and possible resuspension of contaminants (Popper *et al.*, 2014). **Invertebrates**: Seabed disturbance may reduce invertebrate abundance and diversity in dredged areas and adjacent zones. **Macrophytes**: Persistent turbidity may limit light penetration, affecting submerged macrophytes and associated epiphyte communities.			**Scoped In:** Sedimentation from maintenance dredging can have impacts on the morphology of coastlines and supporting hydromorphic conditions.		**Scoped In:** Suspended sediment in the water column and sediment deposition on the seabed/coastline can impact on oxygenation, nutrient availability and temperature of water bodies.	**Scoped In:** Suspended sediments may include priority contaminants entrained within run-off which are subsequently introduced to the water column and impact quality of water bodies.	
Drainage of ORE storage yard - General effects on water quality arising from contaminants percolating through the permeable stone-fill. This may be from accidental	**Scoped In:** **Fish**: Leachate from fuels or chemicals may result in sub-lethal or lethal effects on fish. **Invertebrates**: Contaminants may affect invertebrate community composition, particularly sensitive taxa. **Macrophytes**: Polluted runoff may inhibit macrophyte growth and cause community shifts.			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped In:** Potential pollution of watercourses or water bodies from accidental fuel or chemical compound leakages.	**Scoped In:** Potential introduction of priority or priority hazardous substances to watercourses or water bodies from accidental fuel or chemical compound leakages.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
fuel or chemical compound leakages.								
Potentially polluting activities - Effects on water quality associated with pollution of watercourses or water bodies from construction plant, maritime vessels, renewables components, equipment and storage of materials, such as pollution of watercourses or water bodies from accidental fuel or chemical compound leakages.	**Scoped In:** **Fish**: Leachate from fuels or chemicals may result in sub-lethal or lethal effects on fish. **Invertebrates**: Contaminants may affect invertebrate community composition, particularly sensitive taxa. **Macrophytes**: Polluted runoff may inhibit macrophyte growth and cause community shifts.			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped In:** Potential pollution of watercourses or water bodies from accidental fuel or chemical compound leakages.	**Scoped In:** Potential introduction of priority or priority hazardous substances to watercourses or water bodies from accidental fuel or chemical compound leakages.	
Wastewater - General effects on water quality	**Scoped In:** **Fish**: Nutrient and contaminant inputs may lead to			**Scoped Out:** There will be no discernible impact on the physical		**Scoped In:** Wastewater can impact on	**Scoped Out:** There is no significant potential for priority or	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
associated with wastewater releases	eutrophication, reduce dissolved oxygen, and stress fish populations. **Invertebrates**: Organic loads may reduce macroinvertebrate diversity and promote dominance of pollution-tolerant species. **Macrophytes**: Macrophyte composition may shift due to nutrient enrichment and increased algal competition.			attributes of water bodies arising from these activities.		oxygenation, nutrient availability and temperature of water bodies.	priority hazardous substances arising from potential impacts of wastewater	
Run-off pollution - Potential pathways for contaminants into water bodies via surface water drainage and reconfigured road network	**Scoped In:** **Fish**: Chemical and hydrocarbon residues in surface water runoff may have acute or chronic toxicity to fish. **Invertebrates**: Runoff pollutants may cause direct toxicity or indirect habitat changes for invertebrate communities. **Macrophytes**: Nutrient and chemical loads in runoff may cause habitat degradation or eutrophic shifts in macrophyte communities.			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped In:** Contaminants entrained within run-off can impact on oxygenation, nutrient availability and temperature of water bodies.	**Scoped In:** Contaminants entrained within run-off may include priority and priority hazardous substances which are subsequently introduced to the water column and impact quality of water bodies.	
Fluvial flooding - Increased potential for fluvial flooding due to creation of preferential pathway for runoff	**Scoped Out:** **Fish**: Temporary changes in runoff regime are unlikely to affect fish populations or assemblages. **Invertebrates**: Short-term events unlikely to impact invertebrate assemblages. **Macrophytes**: No macrophyte features are likely to be affected.			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped Out:** There will be no discernible impact on the physio-chemical composition of water bodies due to potential	**Scoped Out:** There is no significant potential for priority or priority hazardous substances arising from potential impacts of fluvial flooding.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
						fluvial flooding activities during operation.		
Pluvial flooding - Increased risk of pluvial flooding due to impermeable surfaces that contribute greater proportions of surface water run-off	**Scoped Out:** **Fish**: Localised pluvial flooding unlikely to have detectable impact on fish communities. **Invertebrates**: No measurable impact anticipated on invertebrate communities. **Macrophytes:** No macrophyte features are likely to be affected.			**Scoped Out:** There will be no discernible impact on the physical attributes of water bodies arising from these activities.		**Scoped Out:** There will be no discernible impact on the physio-chemical composition of water bodies due to potential pluvial flooding activities during operation.	**Scoped Out:** There is no significant potential for priority or priority hazardous substances arising from potential impacts of pluvial flooding.	
Coastal inundation - Increased risk of coastal flooding due to tidal inundation and long-term changes in sea level associated with climate change.	**Scoped Out:** **Fish**: Coastal inundation unlikely to have detectable impact on fish communities. **Invertebrates**: No measurable impact anticipated on invertebrate communities. **Macrophytes**: No macrophyte features are likely to be affected.			**Scoped In:** Impacts of tidal inundation and interactions between the Proposed Development and long-term sea level changes associated with climate change may also affect coastal processes and supporting hydromorphological conditions		**Scoped In:** Changes in hydromorphology can impact on oxygenation, nutrient availability and temperature of water bodies.	**Scoped Out:** There is no significant potential for priority or priority hazardous substances arising from specific changes to coastal processes and supporting hydromorphological condition incurred by flooding and sea-level rise.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
Hydromorphology - Changes in the hydromorphological supporting conditions through habitat alterations impacting on ecological status	**Scoped In:** **Fish**: Habitat alteration may reduce fish nursery or feeding habitat, affecting species distribution and abundance. **Invertebrates**: Benthic habitat changes can lead to loss or modification of invertebrate communities in affected zones. **Macrophytes**: Alterations to substrate or hydrology may reduce suitability for existing macrophyte communities or hinder recolonisation.			**Scoped In:** As a heavily modified water body which must achieve Good Ecological Potential, the potential impacts of the Proposed Development on Rosslare Harbour with regards to coastal processes and subsequent effects on supporting hydromorphological conditions must be considered.		**Scoped In:** Changes in hydromorphology can impact on oxygenation, nutrient availability and temperature of water bodies.	**Scoped Out:** There is no significant potential for priority or priority hazardous substances arising from specific changes to coastal processes and supporting hydromorphological conditions.	

6.3 STAGE 3: IMPACT ASSESSMENT

This stage of the WFD Compliance Assessment assesses whether the proposed construction and operation works will:

- Cause deterioration of water body status;
- Prevent achievement of WFD status objectives.

Each water body that could be potentially affected by the Proposed Development is considered in the context of its status at the time of assessment, the contributing elements to the status classification, the WFD status objective of the water body and scoped in activities.

Mitigation measures described in Section 6.3.1 below are considered as part of the assessment.

This section should be read in conjunction with Chapter 9 – Water Quality and Flood Risk, within the EIAR.

6.3.1 MITIGATION MEASURES

The following types of mitigation measures (adapted from IEMA, 2024) are considered in this assessment:

- **Primary mitigation** is an inherent part of the project design. Primary mitigation relates to the location, design or timing of the project, and these measures are intended to avoid and reduce significant adverse effects on the environment.
- **Secondary mitigation** requires further activity in order to achieve the anticipated outcome, if required. Where potentially significant adverse effects have not been avoided by project location, design or timing or require to be further reduced to within acceptable levels, secondary mitigation may be required. These measures, where required, are recommended in this assessment, and may include measures that are set out in best practice guidance.
- **Tertiary mitigation** measures are required regardless of any EIA assessment and may include measures that are set out as a result of legislative requirements and/or standard sectoral practices. Typically, these measures are standardised and often covered by other forms of legislation or controls, therefore they are not presented in extensive detail in this report.

6.3.1.1 PRIMARY MITIGATION

The assessment of effects described below includes consideration of integrated measures built into the project design (i.e. primary mitigation), which are intended to prevent, reduce and where possible offset any significant adverse effects on the water environment.

Primary mitigation measures built into the project design which are relevant to water quality and flood risk receptors are:

- Piling and blasting works during quay construction will be undertaken from a rockfill bund rather than directly through the water column to minimise direct sedimentation of the water column.
- The drainage system for permeable stone-fill at the ORE storage yard has been designed to ensure any potential contaminant that is released into the stone surface via percolating water is

expected to be collected within and conveyed to an oil/silt interceptor via a perimeter drain lined with free draining stone and a geotextile layer in the trench.

- The perimeter drainage will comprise a perforated pipe drain to capture percolating water draining horizontally from the ORE storage yard.
- The underlying infilled dredged material will be sufficiently compacted and is not anticipated to allow any vertical migration of percolating groundwater.
- A wastewater and foul drainage system will be incorporated into the Proposed Development to convey surface water and foul water captured in the development footprint to an outfall point and there will be treatment of wastewater prior to any discharge.
- The surface water drainage network has been designed to accommodate run-off generated from the road network and therefore minimise risk of contribution to fluvial flooding.
- A French drain will be situated along the toe of the existing slope at the south of the Proposed Development which is designed to capture the surface drainage from the vegetated slope and convey it westwards to a sea outfall. This minimises run-off from the slope onto the new access road to the Small Boat Harbour. This drain will be a perforated pipe surrounded by free draining stone and wrapped in geotextile to minimise loss of fines. No interceptor is proposed since this water is draining straight off the embankment and thus has extremely low risk of contamination.
- A proposed top level of +6.1m CD (+4.41m OD) for Berth 1 and +6.29m CD (+4.2m OD) for Berth 2 has been selected for design of the quay wall berth structures and reclamation area.
- A balance of volumes between dredging and reclamation was sought to avoid disposal of dredged material to sea and make most efficient beneficial use of the resulting dredge spoil; all dredge material will be used for the reclamation with none disposed of at sea.
- Disposal of dredge spoil within the reclamation area will be undertaken within bunded lagoons with minimal spillover of fines controlled through the use of a weir box.
- Dredging works are expected to be carried out on a 24 hours per day, 7 days per week, working basis to reduce the overall duration of the works.
- No dredging is required to provide for marine access to the new small boat harbour, as it has been located in sufficiently deep water to avoid the requirement for capital dredging and to minimise future dredging requirements during operation.
- Maintenance dredging of the existing Rosslare Europort will not occur at the same time as capital dredging for the Proposed Development.

6.3.1.2 SECONDARY MITIGATION

No secondary mitigation measures are considered necessary.

6.3.1.3 TERTIARY MITIGATION

The following section provides a summary of the tertiary measures detailed in Chapter 9: Water Quality and Flood Risk of the EIAR.

Construction Phase

General construction works, excavations and site clearance activities

A Water Quality Management Plan will be prepared and implemented by the Main Contractor for the duration of the proposed construction works.

The following precautionary measures shall be undertaken to minimise the risk of impacting on water quality within the receiving environment:

- Sound design principles will be followed to adhere to relevant Irish guidelines and recognised international guidelines for best practice
- Temporary surface water management requirements will be identified in the Risk Assessment Method Statement (RAMS) by the Main Contractor prior to commencement of construction works
- Should drainage ditches or discharge of surface water from sumps be required during construction, a treatment system will be put in place (i.e. settlement skips etc.) to allow additional settlement of suspended solids entrained within storm water before discharging

Whilst a major incident is highly unlikely to occur in circumstances where the mitigation measures are fully implemented, a major incident response plan will be outlined within the detailed CEMP.

Piling

Pile installation operations have the potential to cause a temporary increase in suspended sediment due to disturbance causing the resuspension of sediments in the water column. All necessary mitigation measures adopted during construction will be outlined in greater detail within the CEMP.

The following key relevant mitigation measures will be undertaken to ensure piling activities limit sedimentation and do not pollute the water column:

- A Piling Risk Assessment will be prepared by the Main Contractor in advance of construction works to assess the potential risk to water quality arising from piling activities
- A Construction Piling Method Statement will be prepared by the Main Contractor in advance of construction works and shall outline the appropriate precautionary measures to offset, or avoid, any potential sediment generating activities
- Erosion and sediment controls during construction to prevent sediment pollution will be implemented, i.e. silt fencing or other suitable barriers will be used at preferential surface flow paths to ensure sediment runoff does not discharge directly to water body receptors or drainage network
- Vibration monitoring will be undertaken to assess and minimise the soil disturbance, and subsequently the volumes of sediment particles available to entrainment within runoff, in the immediate vicinity of piling locations

Dredging

A Dredging Management Plan will be prepared and implemented by the Main Contractor for capital dredging proposed as part of the Proposed Development. A detailed description of mitigation measures and procedures for dredging will be outlined in that document.

In general, the following key relevant mitigation measures will apply to each dredging campaign to limit sedimentation of the water column:

- Loading will be conducted by a back-hoe dredger or trailing suction hopper dredger (TSHD)
- TSHD pumps will be switched off for up to 30 minutes while the drag head is being lifted and returned to the bottom as the dredger turns between successive lines of dredging to minimise the risk of entrainment
- No over-spilling from the vessel will be permitted while the dredging activity is being conducted within the Proposed Development Boundary
- A maximum fill limit for the dredger hopper will be outlined within the Drainage Management Plan to control suspended solids release at the dumping site. This will include for entrained water/wet weight.
- A full record of loading and dumping trucks and a record of the material being dumped will be maintained for each trip
- Additional Accident Prevention Procedure and Emergency Response Procedure documentation will be put in place prior to dredging commencement and outlined within the Dredging Management Plan
- Dredging loading operations will be designed to minimise the disturbance and escape of material at the seabed and during removal through the water column. Loading operations are of relatively short duration and intermittent in nature and the works area is limited.
- A description of dispersal methods and volumes to be considered during mitigation is available in EIAR Chapter 6: Project Description and Technical Appendix 8: Coastal Processes.

Concrete works during quayside wall and berth construction

The following precautionary measures shall be undertaken to minimise the risk of highly alkaline contaminants impacting on water quality during berth construction and general concrete works on site.

- Use of wet concrete and cement will be carefully controlled so as to minimise the risk of any material entering the water, particularly from shuttered structures or the washing of equipment. A barrier between the dust source and water body receptor will be erected during the breaking of concrete (associated with existing structure demolition).
- Concrete use and production shall adhere to control measures outlined in Guidance for Pollution Prevention (GPP5): Works and maintenance in or near water (DEFRA, 2018). Any on-site concrete production during berth construction will have the following mitigation measures:
    - Bunded designated concrete washout area

- Closed circuit wheel wash
- Siting of concrete mixing facilities such that there is no production within a minimum of 10m from the water environment

- Where concrete is emplaced under water or in tidal conditions, specific fast-setting mix will be mandated to limit segregation and any washout of fine material/alkaline components of cement. Use of chemical admixtures, a higher-than-normal fines content, or a higher cement content will be considered by the Main Contractor and addressed in the detailed CEMP.

Oil, fuel and chemical leaks/spillages

General water quality effects may arise associated with works machinery, and on-land operations including the temporary storage of construction materials, oils, fuels and chemicals. As such the potential for spillage or release of fuel oil and other dangerous substances will be mitigated through the following measures:

- The risk of water quality effects associated with works machinery, on-land operations, and leakages/spillages of fuels, oils, other chemicals and waste water, will be controlled through good site management and the adherence to codes and practices outlined by the Main Contractor in the detailed CEMP
  - This includes management and auditing procedures such as tool box talks, and adherence to permits, licences, certificates and planning permissions
- All potentially polluting liquids will be sited on an impervious base and stored within containers and/or fully bunded areas which are secured
  - The control measures in GPP2: Above Ground Oil Storage Tanks (DEFRA, 2017) and GPP26 "Safe storage – drums and intermediate bulk containers" (DEFRA, 2021) shall be implemented to ensure safe storage of oils and chemicals
  - The base and bund walls will be impermeable to the material stored and of adequate capacity
  - Storage of potentially polluting liquids will be conducted using the necessary equipment in accordance with the oCEMP
- Safe operation of refuelling activities shall be in accordance with GPP 7 "Safe Storage – The safe operation of refuelling facilities" (DEFRA, 2011)
- Storage of hazardous material, oil and fuel containers will be distanced more 10m away from any watercourses
- A spillage control procedure and Proposed Development specific Pollution Incident Response Plan will be in place and all staff should be trained on how to deal with spillages. This procedure will be outlined in the oCEMP.
- Emergency spill kits will be readily available on study area to protect against accidental release, leakage or spillage of potentially polluting substances

- All plant and equipment will be regularly inspected for any signs of damage leaks. A checklist must be present to make sure that the checks have been carried out

Mitigation will also make use of the existing Rosslare Europort Oil Spill Response Plan (OSRP), (Rosslare Europort, 2018) which was prepared in 2018 in accordance with the template "expanded contents of local authority Oil/HNS contingency plan annex 3" as issued to the Harbour Master by IRCG in February 2012. The preparation of an OSRP is a mandatory requirement (as per the Sea Pollution (Amendment) Act, 1999). As such OSRPs are standard practices and are not implemented to prevent adverse effects on European Sites. Updates to the OSRP will be identified within the oCEMP and it is the responsibility of the Port Operation team to complete these ahead of construction and operation phases. This Port OSRP is designed to:

- Guide response personnel at Rosslare Europort through the process required to manage an Oil/HNS spill originating from operations within Harbour Limits
- Initiate an appropriate response to an Oil/HNS spill incident within Rosslare Europort and to set in motion the necessary actions to stop or minimise the pollution and to reduce its effects on the environment
- Act as a guide for the Harbour Master at Rosslare Europort, as to the actions and decisions that will be required in an incident response
- Describe the tiered response strategy that considers the spill risk associated with the operation; the nature of the hydrocarbons that could be spilt; the prevailing meteorological and hydrographic conditions and any environmental sensitivity of the surrounding area

A copy of each scheduled vessel Shipboard Marine Pollution Emergency Plan (SOPEP) is forwarded to the Harbour Master annually, or subsequent to a major update. Regulation 37 of MARPOL Annex I require that oil tankers of 150 gross tonnage and above and all ships of 400 gross tonnage and above carry an approved SOPEP.

There will be no planned release of potentially harmful substances from the survey vessels. Strict maritime regulations, normal vessel operating standards and precautions, compliant with all International Maritime Law and National Maritime Legislation, will ensure the risk of a release is low and no significant effects are predicted. In addition, all vessels used shall, as required by law, be MARPOL compliant and fully certified by the Maritime Safety Office (if required). Therefore, it is considered unlikely that there would be any occurrence of a pollution event that could directly or indirectly affect the marine environment.

In addition, the Rosslare Europort Harbour Master is on the circulation list of the Wexford County Council Coastal Pollution Plan. Close cooperation is maintained with the Marine Officer, Wexford County Council as the coastline is adjacent to the Harbour Limits.

With the above mitigation measures in place, it is anticipated that any accidental spillage, sediments, particulate matter, chemicals, fuels during works with the potential to have direct or indirect effect on the surrounding water bodies will be successfully prevented.

Waste Liquids

The following mitigation measures are proposed to reduce or offset potential adverse effects on water quality due to accidental release or leakage of wastewater associated with temporary site facilities:

- Existing and proposed surface water drainage and discharge points will be mapped on a drainage layout. These will be noted on construction site plans and protected accordingly to ensure water bodies are not impacted from sediment and other pollutants using measures to intercept the pathway for such pollutants. Such measures will be set out by the Main Contractor within the detailed CEMP.
- Containerised waste facilities will be utilised at temporary works areas to prevent accidental release, leakage or spillage of potentially polluting wastewater
- Emergency spill kits will be readily available on study area to protect against accidental release, leakage or spillage of potentially polluting substance

Operational Phase

The operational phase will also be subject to Rosslare Europort's Environmental Management System (EMS). The EMS will be updated to include all new infrastructure within the Proposed Development and is supported by a comprehensive suite of Standard Operating Procedures (SOP) providing mitigation of all environmental aspects identified and mechanisms to ensure effective implementation. The risk to the Proposed Development from future climate change will require periodical updates and active management to ensure the Proposed Development remains resilient to future climate impacts.

Oil, fuel and chemical leaks/spillages

The ongoing operation of the port will involve the use of vehicle movement, machinery associated with landside ancillary works and high traffic of maritime vessels. This may cause the pollution of watercourses or water bodies from accidental fuel or chemical compound leakages. Further leakages may also occur from temporary storage of renewables components, oils, chemicals, fuel or materials storage.

As such the potential for spillage or release of fuel oil and other dangerous substances will be mitigated through the following measures during the operational phase:

- Leakages/spillages of fuels, oils, other chemicals and wastewater will be controlled through good site management and the adherence to codes and practices outlined by the Port Operation team in a Site Environmental Management Plan (SEMP). This includes management and auditing procedures such adherence to permits, licences, certificates and planning permissions.
- SOPs will be prepared for oil and chemical spill responses, waste handling and monitoring and maintenance of surface water interceptors. These will further include for transport, handling and storage of hazardous materials, ship cargo, dry bulk material, surface water runoff, fuelling and bunkering of vessels and ship discharges.

- All potentially polluting liquids will be sited on an impervious base and stored within containers and/or fully bunded areas which are secured
    - The control measures in GPP2: Above Ground Oil Storage Tanks (DEFRA, 2017) and GPP26 "Safe storage – drums and intermediate bulk containers" (2021) shall be implemented to ensure safe storage of oils and chemicals
    - The base and bund walls will be impermeable to the material stored and of adequate capacity
    - Storage of potentially polluting liquids will be conducted using the necessary equipment in accordance with the SEMP
- Safe operation of refuelling activities shall be in accordance with GPP 7 "Safe Storage – The safe operation of refuelling facilities" (DEFRA, 2011)
- Storage of hazardous material, oil and fuel containers will be distanced more 10m away from any watercourses
- A spillage control procedure and project specific Pollution Incident Response Plan will be in place and all staff should be trained on how to deal with spillages. This procedure will be outlined in the CEMP
- Emergency spill kits will be readily available on study area to protect against accidental release, leakage or spillage of potentially polluting substances
- All plant and equipment will be regularly inspected for any signs of damage leaks. A checklist must be present to make sure that the checks have been carried out.

Mitigation will also make use of the existing Rosslare Europort Oil Spill Response Plan (OSRP), (Rosslare Europort, 2018) which was prepared in 2018 in accordance with the template 'expanded contents of local authority Oil/HNS contingency plan annex 3' as issued to the Harbour Master by Irish Coast Guards (IRCG) in February 2012. The preparation of an OSRP is a mandatory requirement (as per the Sea Pollution (Amendment) Act, 1999). Updates to the OSRP will be identified within the oCEMP and it is the responsibility of the Port Operation team to complete these ahead of construction and operation phases. As such OSRPs are standard practices and are not implemented to prevent adverse effects on European Sites.

The Port OSRP is designed to:

- Guide response personnel at Rosslare Europort through the process required to manage an Oil/HNS spill originating from operations within Harbour Limits
- Initiate an appropriate response to an Oil/HNS spill incident within Rosslare Europort and to set in motion the necessary actions to stop or minimise the pollution and to reduce its effects on the environment
- Act as a guide for the Harbour Master at Rosslare Europort, as to the actions and decisions that will be required in an incident response

- Describe the tiered response strategy that considers the spill risk associated with the operation; the nature of the hydrocarbons that could be spilt; the prevailing meteorological and hydrographic conditions and any environmental sensitivity of the surrounding area

A copy of each scheduled vessel Shipboard Marine Pollution Emergency Plan (SOPEP) is forwarded to the Harbour Master annually, or subsequent to a major update. Regulation 37 of MARPOL Annex I require that oil tankers of 150 gross tonnage and above and all ships of 400 gross tonnage and above carry an approved SOPEP.

There will be no planned release of potentially harmful substances from the survey vessels. Strict maritime regulations, normal vessel operating standards and precautions, compliant with all International Maritime Law and National Maritime Legislation, will ensure the risk of a release is low and no significant effects are predicted. In addition, all vessels used shall, as required by law, be MARPOL compliant and fully certified by the Maritime Safety Office (if required). Therefore, it is considered unlikely that there would be any occurrence of a pollution event that could directly or indirectly affect the marine environment.

In addition, the Rosslare Europort Harbour Master is on the circulation list of the Wexford County Council Coastal Pollution Plan. Close cooperation is maintained with the Marine Officer, Wexford County Council as the coastline is adjacent to the Harbour Limits.

6.3.2 ASSESSMENT OF POTENTIAL IMPACTS TO WATER BODY STATUS

Table 6.3 provides assessment of surface water bodies based on the potential impacts scoped into the WFD assessment (Table 6.2) and both integrated and tertiary mitigation measures included within Proposed Development (Section 6.3.1).

Table 6.3: Assessment of Potential Impacts to Water Body Status

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
Construction Phase								
Suspended Sediment and Sedimentation - Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column	Elevated suspended sediment levels during construction, particularly from dredging and reclamation, may result in temporary sub-lethal stress to coastal fish populations, as well as short-term disruption of benthic invertebrate communities, and potential smothering or light attenuation effects on macrophyte assemblages in the vicinity of works. However, mitigation through use of the weir box and real-time turbidity monitoring and management will limit the extent, duration and spatial reach of these effects. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			Mitigation through use of the weir box and real-time turbidity monitoring and management will limit the extent, duration and spatial reach of these effects and will ensure that minimal levels of suspended sediment will occur during construction activities. As a result, there will be no potential to cause a deterioration in the hydrological or morphological status or to prevent the achievement of the hydromorpholgical supporting elements of the water bodies.		As per hydromorphological supporting elements.	As per physio-chemical supporting elements.	
Concrete and cement pollution - Release of highly alkaline contaminants to water column from concrete and cement works	Uncontrolled release of cement wash or wet concrete into the marine environment may lead to localised increases in pH, with potential acute and chronic toxicity effects on fish and benthic invertebrates. Site-specific construction controls and pollution prevention measures (e.g. cement containment, designated washout areas - as outlined in Section 6.3.1.3) will ensure no significant impacts occur to the biological quality elements. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		Site-specific construction controls and pollution prevention measures (e.g., cement containment, designated washout areas will ensure that the construction activities will not result in release of highly alkaline contaminants from concrete and cement. Therefore, there will be no potential to cause a deterioration in the physico-chemical or to prevent the achievement of the physico-chemical supporting elements of the water bodies.	**Scoped Out (see Table 6.2)**	
General Construction activities - water quality effects associated with pollution of watercourses or water bodies from accidental fuel or chemical compound leakages, or wastewater	There is potential for accidental spillage of hazardous substances such as diesel or hydraulic fluids to affect aquatic organisms, particularly in confined or low-dilution areas. These substances may have acute or chronic toxic effects on fish, invertebrates, and macrophyte communities, including impacts on photosynthesis or tissue integrity. However, with rigorous adherence to the site's environmental management procedures (including spill response protocols and fuel storage controls - as outlined in Section 6.3.1.3), the risk of ecological harm to fish, invertebrates or macrophytes is very low. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that accidental fuel or chemical compound leakages, and wastewater, will be prevented from entering watercourses and water bodies. Therefore, they will not impact significantly on the	As per physio-chemical supporting elements.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
						supporting physico-chemical conditions and ecological status will not deteriorate or be prevented from achieving its environmental objectives in all water bodies within the study area.		
Underwater Noise generated during construction – from Piling and Blasting activities on fisheries	Underwater noise - has the potential to elicit temporary behavioural changes or displacement in sensitive fish species, with a low risk of minor auditory injury depending on proximity. However, rotary piling will be prioritised, blasting will be infrequent and spaced out over time, and all activities will occur within defined bunded areas where applicable. These features, combined with site-specific mitigation (as outlined in the oCEMP), will ensure that underwater noise does not significantly affect fish populations. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		**Scoped Out (see Table 6.2)**	**Scoped Out (see Table 6.2)**	
Operation Phase								
General Operational Activities	Routine port activities may result in localised contaminant inputs (e.g. hydrocarbons, nutrients), which could affect fish health, reduce invertebrate diversity, or promote eutrophication affecting macrophyte communities. However, these risks are mitigated by engineered drainage systems, pollutant interceptors, and operational controls under the LPS. Consequently, no significant effects on the composition, abundance or diversity of fish, benthic invertebrates or macrophyte communities are anticipated. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**				
Suspended Sediment and Sedimentation - Increased suspended sediment levels due to the release of sediment runoff and plumes to the water column	Operational-phase sediment release is expected to be infrequent and localised, arising primarily from vessel movements. These activities could temporarily reduce light availability for macrophytes, or affect invertebrate feeding and fish behaviour. However, the impacts will be short-term and spatially constrained. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that minimal levels of suspended sediment will occur during Operational activities. Appropriate mitigation from the EU toolbox of mitigation measures have been applied to the design.		As per hydromorphological supporting elements.	As per hydromorphological supporting elements.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
Drainage of ORE storage yard - General effects on water quality arising from contaminants percolating through the permeable stone-fill. This may be from accidental fuel or chemical compound leakages.	Percolation of contaminants through stone fill could introduce hydrocarbons or chemicals into the aquatic environment, affecting macrophyte growth, invertebrate taxa, or fish health. The design includes hydrocarbon separators and lined drainage systems to prevent leachate migration. As a result, the risk to biological quality elements is considered negligible. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that accidental fuel or chemical leakages will not be conveyed to receiving water bodies during construction activities. This will be ensured through use of oil/silt interceptors within a perimeter drainage system to capture contamination. Therefore, any contamination events will not impact significantly on the supporting physico-chemical conditions and ecological status will not deteriorate or be prevented from achieving its environmental objectives in all water bodies within the study area.	As per physio-chemical supporting elements.	
Potentially polluting activities - Effects on water quality associated with pollution of watercourses or water bodies from construction plant, maritime vessels, renewables components, equipment and storage of materials, such as pollution of watercourses or water bodies from accidental fuel or chemical compound leakages.	There is potential for accidental spillage of hazardous substances such as diesel or hydraulic fluids to affect aquatic organisms, particularly in confined or low-dilution areas. These substances may have acute or chronic toxic effects on fish, invertebrates, and macrophyte communities, including impacts on photosynthesis or tissue integrity. However, with rigorous adherence to the site's environmental management procedures (including spill response protocols and fuel storage controls - as outlined in Section 6.3.1.3), the risk of ecological harm to fish, invertebrates or macrophytes is very low. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that accidental fuel or chemical leakages will not be conveyed to receiving water bodies during construction activities This will be ensured through use of oil/silt interceptors within a perimeter drainage system to capture contamination and strict adherence to the existing Rosslare Europort Oil Spill Response Plan (OSRP). Therefore, any contamination events will not impact significantly on the supporting physico-chemical conditions	As per physio-chemical supporting elements.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
						and ecological status will not deteriorate or be prevented from achieving its environmental objectives in all water bodies within the study area.		
Wastewater - General effects on water quality associated with wastewater releases	Discharge of untreated wastewater could cause nutrient enrichment and oxygen depletion, adversely affecting fish, invertebrate, and macrophyte communities. However, all wastewater will be routed to an Irish Water WWTP, eliminating the risk of uncontrolled release. Therefore, no deterioration in biological quality elements is anticipated. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that foul water is conveyed via the proposed wastewater and foul drainage system to the existing foul pumping station at Terminal 7, currently under the control of Iarnród Éireann. From there, the foul water flows westwards by gravity towards the Rosslare WWTP in Uisce Éireann pipework for treatment and disposal. The additional loading at the WWTP will not be significant and therefore events will not impact significantly on the supporting physico-chemical conditions and ecological status will not deteriorate or be prevented from achieving its environmental objectives in all water bodies within the study area.	As per physio-chemical supporting elements.	
Run-off pollution - Potential pathways for contaminants into water bodies via surface water drainage and reconfigured road network	Runoff from hardstand and access roads could introduce hydrocarbons and nutrients into receiving waters, potentially leading to chronic toxicity in fish, altered invertebrate communities, and eutrophication of macrophyte habitats. However, the risk is minimised by silt and oil interceptors, routine maintenance, and the separation of foul and surface water systems. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that surface water on impermeable surfaces and within the road network will be captured in the development footprint, conveyed to an	As per physio-chemical supporting elements.	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
						outfall point and treated prior to any discharge. Therefore, run-off pollution will not impact significantly on the supporting physico-chemical conditions and ecological status will not deteriorate or be prevented from achieving its environmental objectives in all water bodies within the study area.		
Pluvial flooding - Increased risk of pluvial flooding due to impermeable surfaces that contribute greater proportions of surface water run-off	Although operational flooding could theoretically disturb habitats or increase pollution pathways, the development design includes measures to manage surface water effectively. There is no identified mechanism by which operational-phase pluvial flooding would cause deterioration in the status of biological quality elements. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			**Scoped Out (see Table 6.2)**		**Scoped Out (see Table 5-2)**	**Scoped Out (see Table 6.2)**	
Coastal inundation - Increased risk of coastal flooding due to tidal inundation and long-term changes in sea level associated with climate change.	**Scoped Out (see Table 5-2)**			Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that coastal inundation of the Proposed Development will not occur. Appropriate mitigation from the EU toolbox of mitigation measures have been applied to the design. A proposed top level of +6.1m CD (+4.41m OD) for Berth 1 and +6.29m CD (+4.2m OD) for Berth 2 has been selected for design of the quay wall berth structures and reclamation area. This design top level has been estimated based on a combination of Highest Astronomical Tide, Storm surge associated with 100yr Return Period, Sea level rise Proposed Development for 2080, Highest wave height crest and ensuring quay height is significantly above the RCP 8.5 Proposed Development sea level rise by 2100. As a result, there will be no potential to cause a deterioration in the good ecological potential or to prevent the achievement of	As per hydromorphological supporting elements.	**Scoped Out (see Table 6.2)**	

Potential Impact	Biological supporting elements			Hydromorphological supporting elements		Physio-chemical supporting elements	Chemical	
	Fish	Invertebrates	Macrophytes	Hydrological regime	Morphology		Priority hazardous substances	Priority substances
				the environmental objectives of the water bodies.				
Hydromorphology - Changes in the hydromorphological supporting conditions through habitat alterations impacting on ecological status	Operational changes in the hydromorphological regime (e.g., quay wall hardening, berthing structures) may alter habitats used by fish and invertebrates, and affect macrophyte recolonisation. However, the development occurs within a heavily modified water body and does not introduce novel pressures beyond those permitted under its designation. No significant impacts on fish, invertebrate or macrophyte status are anticipated. Overall, the activities will not significantly affect the biological quality elements or prevent surface water bodies from achieving or maintaining good ecological status.			Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that changes in the hydromorphological supporting conditions through habitat alterations will not occur as a result of the Proposed Development. Appropriate mitigation from the EU toolbox of mitigation measures has been applied to the design and the proposed management of any areas of increased accretion and erosion outlined in Chapter 8 – Coastal Processes mitigates the significance of any potential effects on hydromorphological supporting conditions to minor. As a result, there will be no potential to cause a deterioration in the good ecological potential or to prevent the achievement of the environmental objectives of the water bodies.		Mitigation through integrated measures built into Proposed Development design and best practice measures, as outlined in Sections 6.3.1.1 & 6.3.1.3, will ensure that no changes to habitat alterations will impact supporting physico-chemical conditions, and subsequently the ecological status of the water bodies in the study area will not be affected.	**Scoped Out (see Table 6.2)**	

6.3.3 PROTECTED AREA OBJECTIVES

The water bodies within the Proposed Development study area include the Wexford Slobs and Harbour pNHA, located approximately 2.5km west of the Proposed Development.

6.3.4 RECREATIONAL WATERS (BATHING WATERS)

The closest bathing water to the boundary of the Proposed Development is the Rosslare Strand bathing water which is located approximately 3km northwest. Based on the most recent bathing water publication (EPA, 2023), this bathing area is currently classified as having 'Excellent' water quality. All individual samples at Rosslare Strand for the 2024 monitoring seasons are shown as 'Excellent', as outlined in Section 5.3.

During the operational phase there will be very limited additional organic loading to the Rosslare Harbour Wastewater Treatment Plant (WWTP) agglomeration and therefore the Proposed Development will not increase the risk to bathing waters in the vicinity of the Port. Nutrient and organic loads during the construction phase will be limited to welfare facilities at the site compounds and any potential contamination effects will be appropriately mitigated by measures set out within both the Outline Construction Environmental Management Plan accompanying this application and the detailed CEMP to be prepared by the main contractor.

6.3.5 NUTRIENT SENSITIVE AREAS

The Urban Waste Water Treatment Regulations 2001, as amended (which transpose the Urban Wastewater Treatment Directive (91/271/EEC) into Irish law and update the Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations 1994, as amended) list nutrient sensitive waters in the Third Schedule. The closest nutrient sensitive area is Wexford Harbour located approximately 7.5km northwest of the Proposed Development.

Foul water from the ORE development will be pumped into a pressure main, along the new access road, away from the new ORE development area to the existing foul pumping station at Terminal 7, currently under the control of Iarnród Éireann. From there, the foul water flows westwards by gravity towards the Rosslare WWTP in Uisce Éireann pipework for treatment and disposal via foul sewer outfall point at the existing Europort Terminal facility. The nutrient loading from the Proposed Development will not be significant in the context of overall loading to the agglomeration and there is adequate capacity available for any additional load. Overall, due to the small relative loading volumes and distance involved, the Proposed Development will not compromise the achievement of the standards required for the Wexford Harbour nutrient sensitive area.

6.3.6 ASSESSMENT OF PROPOSED DEVELOPMENT IMPACT ON ACHIEVEMENT OF WFD OBJECTIVES

Table 6.4 assesses the potential for the Proposed Development to impact on the achievement of WFD objectives of hydrologically linked water bodies. This includes the assessment of potential impacts outlined in Table 6.2, as applied to the identified water bodies, considering the water body status information, and the likelihood and magnitude of the possible impact considering all of the primary and tertiary mitigations.

Table 6.4: Assessment of impact of the Proposed Development on WFD Objectives

Water body Name	Type	Current Status[3]	Driving Element	Significant Water Management Issue / Pressure	Source Activity	Example RBMP Measures	Objective	Derogation Type	Reason	Discussion of Impact on WFD Objectives	Expected Deterioration in WFD Status
South Slob Channel	Transitional	Moderate	EPA have assigned poor status by modelling	Anthropogenic Pressures	Unknown	• The Local Authority Waters Programme (LAWPRO) will conduct assessments of water bodies in Priority Areas for Action where the pressures are unknown to identify the specific issues and actions that are required to protect or restore water quality as necessary. • Each local authority supported by LAWPRO will conduct assessments of other water bodies where the pressures are unknown (which are not within priority areas for action) to identify the specific issues and actions that are required to protect or restore water quality as necessary.	Good by 2027	Extended	Article4(4) - Technical feasibility	The significant pressures regarding the South Slob Channel are of unknown anthropogenic origin. This compliance assessment finds that the Proposed Development will not introduce any further pressures of an anthropogenic nature to the water body. The design mitigation measures outlined in Section 6.3.1.1 and best practice mitigation measures outlined in Section 6.3.1.3 will ensure the Proposed Development will not prevent the achievement of environmental objectives by 2027.	Very low risk
Wexford Harbour	Coastal	Moderate	Invertebrates	Agriculture	Rural Diffuse & Point Sources	• A new Nitrates Action Programme put into effect through the Good Agricultural Practice Regulations which will retain and strengthen the existing controls and implement tighter controls on Nitrogen and Phosphorous from agriculture. • A new large-scale Water European Innovation Partnership EIP Proposed Development called 'Farming for Water', the objective of which is to focus on reducing losses of phosphorus, nitrogen, sediment and, where relevant, pesticides to water from agricultural lands by promoting the adoption of innovative best practice in nutrient management. • DHLGH will put arrangements in place to ensure independent assessments and reviews of the efficacy of the Nitrates Action Programme (NAP), the CAP Strategic Plan and the Water EIP (and other relevant measures) to bring the 1,000 water bodies impacted by agriculture up to good status and to prevent deterioration. • The application of Nature based Natural Water Retention Measures (NWRM) and other suitable measures.	Good by 2027	Extended	Article4(4) - Technical feasibility	The significant pressures regarding the Wexford Harbour are related to Agriculture and Urban Waste Water. With regards to agriculture, the Proposed Development will not contribute any potential pressures of this nature to the water body. This compliance assessment further concludes that the Proposed Development will not introduce any further pressures of an urban waste water origin to the water body. The design mitigation measures outlined in Section 6.3.1.1, specifies the proposals for a treatment of wastewater, integrated foul sewer network and the non-significant additional loading to Rosslare WWTP, in addition to best practice mitigation measures outlined in 6.3.1.3, and will ensure the Proposed Development will not prevent the achievement of environmental objectives by 2027.	Very low risk
				Urban Waste Water	Combined Sewer Overflows (CSO)	• Continued investment in waste water infrastructure with Uisce Éireann investing over €2.3bn in standalone Proposed Developments at 108 waste					Very low risk

[3] From 2021 baseline as reported by the EPA based on the 2016 – 2021 WFD monitoring programme

Water body Name	Type	Current Status[3]	Driving Element	Significant Water Management Issue / Pressure	Source Activity	Example RBMP Measures	Objective	Derogation Type	Reason	Discussion of Impact on WFD Objectives	Expected Deterioration in WFD Status
						water treatment plants, 77 collection networks and 92 related national programme. • Ensure development of any new standards for CSO emerging from an update to the Urban Wastewater Treatment Directive. • Continue to develop and update the Gap Analysis as a tool to deliver environmental benefits for infrastructure planning. • Establishment of a pilot Proposed Development to investigate solutions to urban runoff using Nature-based Solutions.					
Milltown Rosslare River	River	Moderate	EPA have assigned poor status by modelling	Agriculture	Rural Diffuse & Point Sources	• A new Nitrates Action Programme put into effect through the Good Agricultural Practice Regulations which will retain and strengthen the existing controls and implement tighter controls on Nitrogen and Phosphorous from agriculture. • A new large-scale Water European Innovation Partnership EIP Proposed Development called 'Farming for Water', the objective of which is to focus on reducing losses of phosphorus, nitrogen, sediment and, where relevant, pesticides to water from agricultural lands by promoting the adoption of innovative best practice in nutrient management. • DHLGH will put arrangements in place to ensure independent assessments and reviews of the efficacy of the Nitrates Action Programme (NAP), the CAP Strategic Plan and the Water EIP (and other relevant measures) to bring the 1,000 water bodies impacted by agriculture up to good status and to prevent deterioration. • The application of Nature based Natural Water Retention Measures (NWRM) and other suitable measures.	Good by 2027	Extended	Article4(4) - Technical feasibility	The significant pressures regarding the Milltown Rosslare river water body are related to Agriculture and Urban Waste Water. With regards to agriculture, the Proposed Development will not contribute any potential pressures of this nature to the water body. This compliance assessment further concludes that the Proposed Development will not introduce any further pressures of an urban waste water origin to the water body. The design mitigation measures outlined in Section 6.3.1.1, specifically the proposals for a treatment of wastewater, integrated foul sewer network and the non-significant additional loading to Rosslare WWTP, in addition to best practice mitigation measures outlined in 6.3.1.3, will ensure the Proposed Development will not prevent the achievement of environmental objectives by 2027.	Very low risk
				Urban Waste Water	Combined Sewer Overflows (CSO)	• Continued investment in waste water infrastructure with Uisce Éireann investing over €2.3bn in standalone Proposed Developments at 108 waste water treatment plants, 77 collection networks and 92 related national programme.					Very low risk

Water body Name	Type	Current Status[3]	Driving Element	Significant Water Management Issue / Pressure	Source Activity	Example RBMP Measures	Objective	Derogation Type	Reason	Discussion of Impact on WFD Objectives	Expected Deterioration in WFD Status
						• Ensure development of any new standards for CSO emerging from an update to the Urban Wastewater Treatment Directive. • Continue to develop and update the Gap Analysis as a tool to deliver environmental benefits for infrastructure planning. • Establishment of a pilot Proposed Development to investigate solutions to urban runoff using Nature-based Solutions.					
				Domestic Waste Water	Domestic Wastewater Discharges (Septic Tanks)	• Extension of Domestic Wastewater Treatment Systems grant scheme to assist with costs of domestic wastewater treatment system / septic tank remediation in high-status water areas and in Priority Areas for Action where defective systems are posing a risk to waters. • Inspections under the National Inspection Plan for Domestic Wastewater Treatment Systems under the Water Service Act. • Local authorities to engage with householders to improve general awareness of septic tank maintenance requirements, and to address any failing septic tanks.					Very low risk
Rosslare Harbour	Coastal	Good	Not at risk	n/a	n/a	Protect.	Good by 2027	Extended	Article4(4) - Technical feasibility	This water body is currently achieving its environmental objectives, and the focus will be to ensure it does not deteriorate in status. The construction and operation of the Proposed Development will not increase the risk of deterioration in water body status given the integrated measures built into the Proposed Development design, as outlined in Section 6.3.1.	Very low risk
Southwestern Irish Sea	Coastal	Good	Not at risk	n/a	n/a	Protect.	Good by 2027	Extended	Article4(4) - Technical feasibility	This water body is currently achieving its environmental objectives, and the focus will be to ensure it does not deteriorate in status. The construction and operation of the Proposed Development will not increase the risk of deterioration in water body status given the integrated measures built into the Proposed Development design, as outlined in Section 6.3.1.	Very low risk

Water body Name	Type	Current Status[3]	Driving Element	Significant Water Management Issue / Pressure	Source Activity	Example RBMP Measures	Objective	Derogation Type	Reason	Discussion of Impact on WFD Objectives	Expected Deterioration in WFD Status
Bridgetown	Groundwater	Good	Not at risk	n/a	n/a	Protect.	Good by 2027	Extended	Article4(4) - Technical feasibility	This water body is currently achieving its environmental objectives, and the focus will be to ensure it does not deteriorate in status. The construction and operation of the Proposed Development will not increase the risk of deterioration in water body status given the integrated measures built into the Proposed Development design, as outlined in Section 6.3.1.	Very low risk

7 SUMMARY

A WFD Compliance Assessment has been undertaken for the Rosslare ORE Hub development, the Proposed Development. The assessment is based on data and guidance from the Environment Protection Agency and Planning Inspectorate and is undertaken in a staged approach to ensure that the Proposed Development components and associated activities are assessed in the context of the quality elements that contribute to overall WFD status.

The principal aim of the assessment is to demonstrate that the proposed construction and operation activities, as set out within Chapter 6 – Project Description of the EIAR, do not result in deterioration of current WFD status of water bodies within the WFD study area and to ensure that the Proposed Development does not compromise the achievement of the WFD objectives for the improvement in the overall status of these water bodies. The 'current' status as referenced in this report refers to the 2021 baseline as reported by the EPA based on the 2016 – 2021 WFD monitoring programme. The assessment also considered the designated areas which may be hydraulically linked to water bodies.

The scoping stage of the WFD compliance assessment has concluded that there are components and activities associated with the Proposed Development that represent a risk to the WFD status and objectives. Therefore, these elements were scoped into the assessment (see Section 6.2). The relevant quality elements contributing to the overall status were then considered in addition to how each potential impact could affect these (see Section 6.3).

The potential impacts from the Proposed Development were assessed in the context of the environmental objectives for the potentially affected water bodies. Primary and tertiary mitigation measures will ensure that there will be very low risk of deterioration in WFD status as a result of the Proposed Development.

The overall conclusion of the WFD Compliance Assessment is that there will be a **very low risk of deterioration in status** from the Proposed Development, and the Proposed Development is not expected to prevent the relevant water bodies from achievement of their WFD objectives.

8 REFERENCES

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