



REMEDIAL ENVIRONMENTAL IMPACT ASSESSMENT (rEIAR)

Ros an Mhíl Deep Water Quay

Chapter 7: Water

Department of Agriculture, Food and the Marine

October 2025

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MWP, Engineering and Environmental Consultants

Address: Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK, Ireland

www.mwp.ie



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7. Water

7.1 Introduction

This chapter of the remedial Environmental Impact Assessment Report (rEIAR) considers the likely effects that have occurred or are occurring on the existing water environment arising from the construction works of the Ros an Mhíl Deep Water Quay development undertaken during the period January 2023 to 20 May 2024. The works undertaken prior to the expiry of the 2018 planning permission are included to facilitate the assessment of cumulative effects. A full description of the development and the associated project elements are provided in **Volume II, Chapter 2** Project Description of this rEIAR. The assessment comprises:

- A review of the existing receiving environment prior to commencement of works in 2023;
- Prediction and characterisation of likely effects;
- Evaluation of significance of effects; and
- Review of mitigation measures for completed works.

7.2 Methodology

7.2.1 Legislation and Best Practice

The following section sets out the legislative context of the assessment in relation to surface and groundwater quality, and the relevant guidelines with further legislation used to inform the preparation and assessment of impacts from the development on surface water and groundwater.

7.2.1.1 Water Framework Directive (WFD) (2000/60/EC)

The Water Framework Directive (WFD) (2000/60/EC) establishes an integrated and coordinated framework for the sustainable management of water. Under the WFD¹, the island of Ireland has been divided into a number of River Basin Districts (RBD) in order to facilitate the effective implementation of the WFD objectives. The development site is located within the Irish River Basin District (IRBD) in Hydrometric Area No. 31.

The strategies and objectives of the WFD in Ireland have influenced a range of national legislation and regulations, since its inception in the year 2000.

The WFD (1st Cycle) was transposed into national legislation in 2003, with the aims to:

- Prevent deterioration of status for surface and groundwaters and the protection, enhancement and restoration of all water bodies;
- Achieve good ecological status and good chemical status for surface waters and good chemical and good quantitative status for groundwaters;

¹ Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

- Progressively reduce pollution of priority substances and phase-out of priority hazardous substances in surface waters and prevention and limitation of input of pollutants in groundwaters;
- Reverse any significant upward trend of pollutants in groundwaters; and
- Achieve standards and objectives set for protected areas in Community legislation.

The objective for each surface water and groundwater body is to prevent deterioration, maintain high and good status waters, restore waters to at least good status where necessary, and ensure that the requirements of associated protected areas are met.

The River Basin Management Plan for Ireland 2022 - 2027 (RBMP), the third-cycle of river basin management planning under the WFD, provides for the targeted implementation of the two principle objectives of the WFD, namely;

1. To prevent the deterioration of water bodies and to protect, enhance and restore them with the aim of achieving at least good status; and
2. To achieve compliance with the requirements for designated protected areas.

Five key 'evidence-based' priorities form the pillar of this iteration of the RBMP are outlined as follows:

1. Ensure full compliance with relevant EU legislation;
2. Prevent deterioration;
3. Meet the objectives for designated protected areas;
4. Protect high-status waters; and
5. Implement targeted actions and pilot schemes in focused sub-catchments aimed at:
 - a) targeting water bodies close to meeting their objective; and
 - b) addressing more complex issues that will build knowledge for the third cycle.

The assessment will determine the impact in accordance with the following regulations which give effect to the WFD:

- S.I. No. 9 of 2010 European Communities Environmental Objectives (Groundwater) Regulations 2010 (as amended);
- S.I. No. 272 of 2009 European Communities Environmental Objectives (Surface Water Regulations) 2009 (as amended);
- S.I. No. 296 of 2009 European Communities Environmental Objectives (Pearl Mussel Regulations) 2009 (as amended); and
- Urban Waste Water Treatment Regulations (SI No. 254 of 2001 as amended) (UWW Regulations).

These Regulations have been devised to implement the requirements of the WFD and establish Environmental Quality Standards (EQS) for the purpose of assessing the status of surface waters and groundwaters. The Surface Waters Regulations apply to all surface waters including lakes, rivers, canals, transitional waters, and coastal waters and supersede all previous water quality regulations.

7.2.1.2 Water Framework Directive – Protected Area

The WFD requires a register of protected areas. These are protected for their use (such as fisheries or drinking water) or because they have important habitat and/or species that directly depend on water. The register includes areas identified by the WFD itself or other European Directives. These may include the following:

- Areas used for water abstraction - European Union (Water Policy) (Abstractions Registration) Regulations 2018 (S.I. No. 261 of 2018);
- Areas designated for the protection of economically significant aquatic species (Freshwater Fish Directive 78/659/EEC; Shellfish Directive 79/923/EEC);
- Recreational waters (Bathing Waters Directive 76/160/EEC);
- Nutrient Sensitive Areas (Nitrates Directive 91/676/EEC; Wastewater Treatment Directive 91/271/EEC);
- Areas of protected species or habitats where water quality is an important factor in their protection (Natura 2000 sites under Birds Directive 79/409/EEC and Habitats Directive 72/43/EEC); and

The development does not take place in any designated area. The Connemara Bog Complex SAC (002034) is located to the east of the development, while Kilkieran Bay and Islands SAC (002111) is located to the west. Both of these Special Areas of Conservation (SAC) are hydrologically linked to the development via Cashla Bay. There are no designated Special protection Areas (SPA) within the vicinity of the development.

7.3 Site Location

Ros an Mhíl Harbour is located on the north-east shore of Cashla Bay near the village of Ros an Mhíl in Connemara. Ros an Mhíl is located, approximately 40 kilometres to the west of Galway city, within the functional area of Galway County Council.

The location of Ros an Mhíl in a geographical context is shown on **Figure 7-1**. Ros an Mhíl village is located approximately 1km from the harbour. A number of residential dwellings, a local shop, a school, and a church are located within the village. Throughout the surrounding area there are a few localised industries making use of the harbour facilities. These include fish processing, net repairs, boat repairs and diesel and oil supply companies. These industries are dependent on the continued operation of Ros an Mhíl Harbour.

Ros an Mhíl Harbour is primarily a fishing port and serves the Irish and foreign fishing fleet that operates off the coast of Galway. It lies between the major fishing ports of Killybegs to the north and Dingle and Castletownbere to the south. It can accommodate vessels up to approximately 5m draught.

The inner harbour is positioned on the north-east shore of upper Cashla Bay and is well sheltered. The existing harbour currently comprises two piers, known as Piers 1 and 2, along with a dedicated passenger ferry terminal and a small craft harbour. Pier 2 is the more recent development of the two piers. The disposition of these piers is such that they create an approximately rectangular shaped basin at the centre of the harbour. The existing harbour layout is shown in **Figure 7-2**.

Údarás na Gaeltachta have invested in basic infrastructure in the harbour area. To date the investment has taken the form of two commercial buildings; service roads and a slipway. The commercial units are leased to private tenants. Other employers operating in the Harbour area include Bord Iascaigh Mhara (BIM) who operate an Ice Plant; and Iasc Mara Teoranta who operate a pelagic fish (mainly mackerel and herring) processing facility.

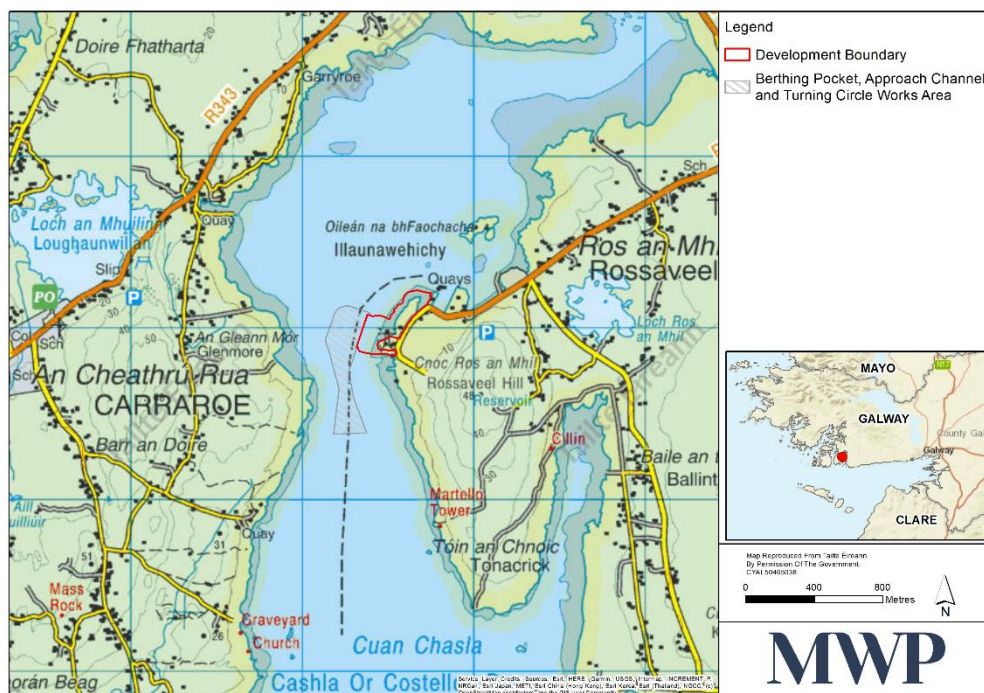


Figure 7-1: Site Location



Figure 7-2: Map of Existing Ross an Mhíl Harbour layout

7.4 Baseline Environment

7.4.1 Hydrology

The deep water quay development is located within the Hydrometric Area 31 waterbody, a catchment of Galway Bay North. Cashla_SC_010 is the subcatchment, while the river sub basin is Keeraunnagark_North_010.

There are several rivers that flow into Cashla Bay. At the mouth of the bay to the east, the Keeraunnagark North (Keeraunnagark_North_010) flows westward into Loch na Lannach before entering Cashla Bay and is an order 1 river. At the north of Cashla Bay, there are two rivers (the Cashla and Clynagh) that enter the bay. Cashla (Cashla_010) is an Order 4 river and designated 'At Risk' under the WFD, while the Clynagh, an order 1 river, flows south from Faddacrussan Lough into Cashla Bay. On the western side of the bay, Carrowroe South (Carrowroe_South_010), order 1 river, flows eastwards into the bay.

Cashla Bay is designated as a coastal waterbody (IE_WE_190_0000), considered 'Not at Risk' under the WFD. At the time of writing of the 2017 EIAR, the water body had an unassigned value as there was no information available. Data for the Cashla coastal waterbody wasn't available until the completion of the SW 2013-2018 round of monitoring. Cashla Bay flows into the Aran Islands, Galway Bay, Connemara coastal waterbody (IE_WE_010_000), south of the development. As with Cashla Bay, there was no monitoring information available until the completion of the SW 2016-2018 monitoring program. The coastal water body has a 'Review' status under the WFD.

There are two transitional waterbodies located at the north of Casla Bay, the Casla Estuary (IE_WE_190_0100) and Lough Faddacrussan (IE_WE_190_0200). There was no monitoring done on these waterbodies prior to the SW 2013-2018 round of monitoring. Casla Estuary has a 'Not at Risk' status under the WFD while Lough Faddacrussan is designated as 'Review'.

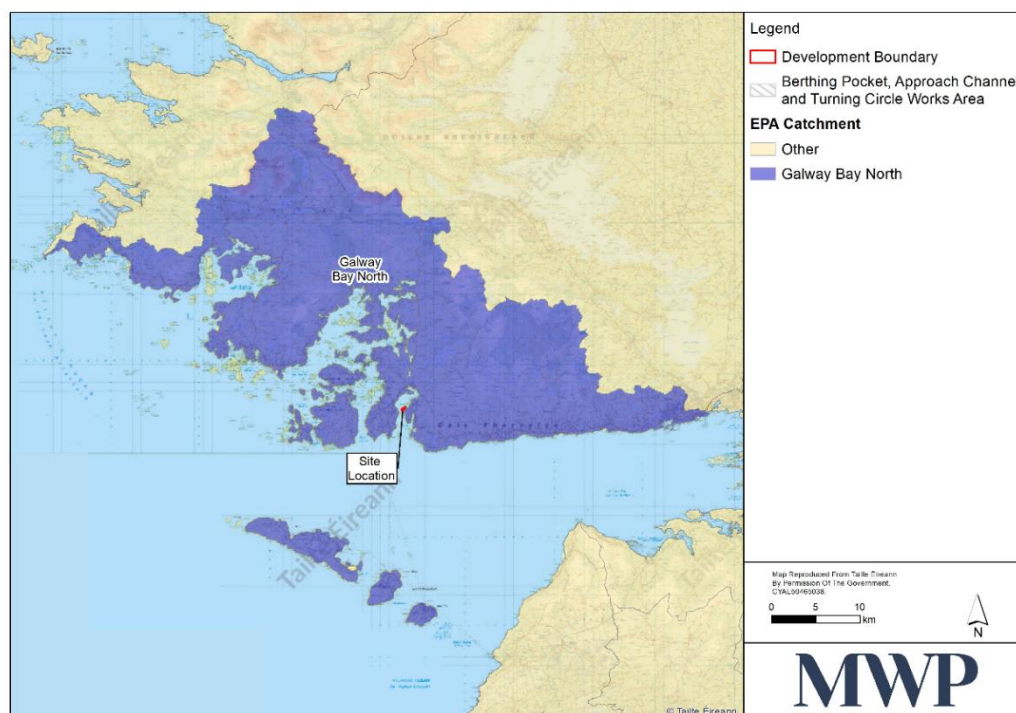


Figure 7-3: Catchment where the Development is located

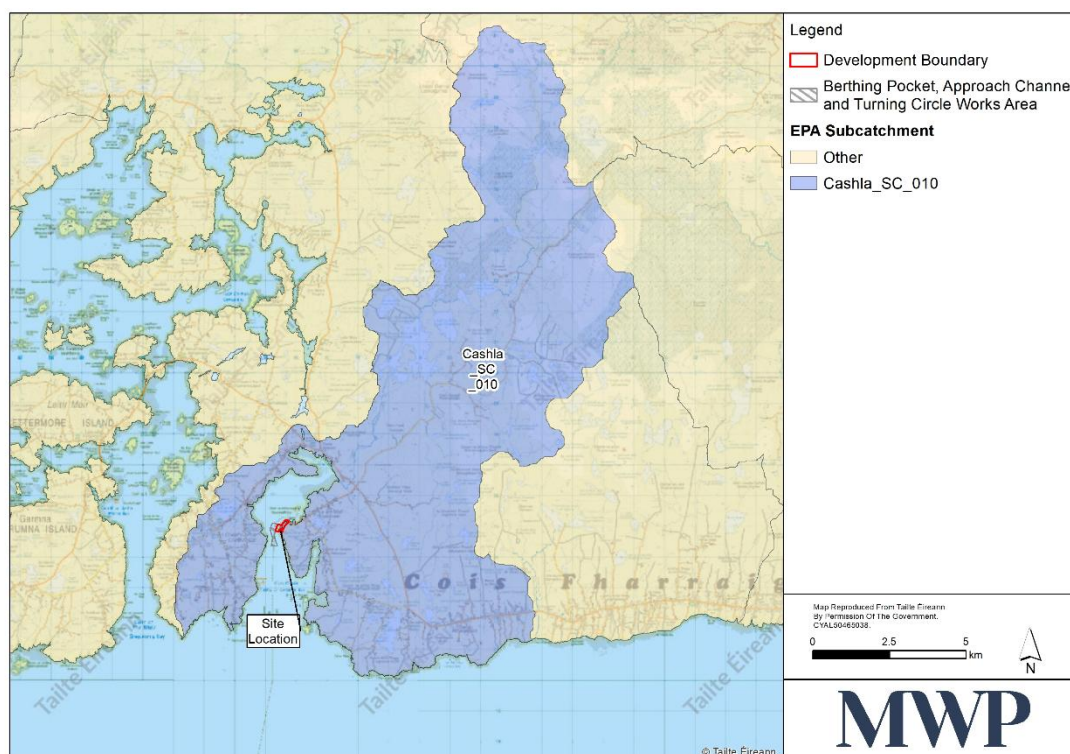


Figure 7-4: Sub-catchment where the Development is located

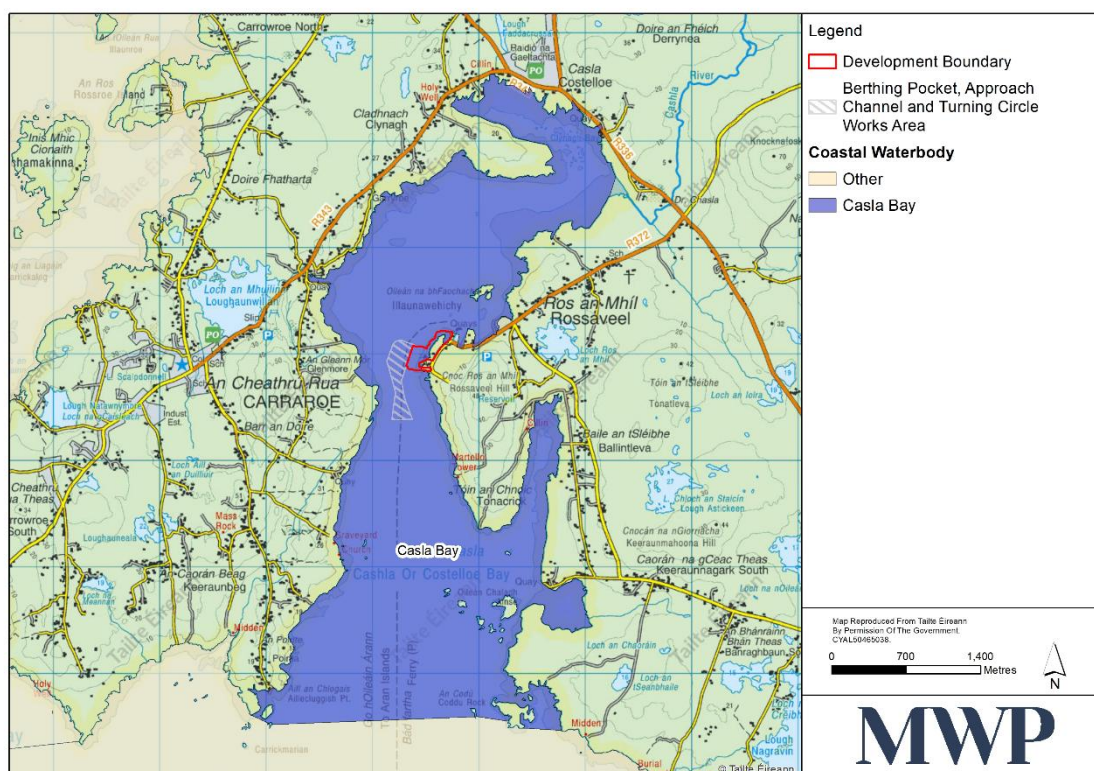


Figure 7-5: Coastal Waterbody where the Development is located

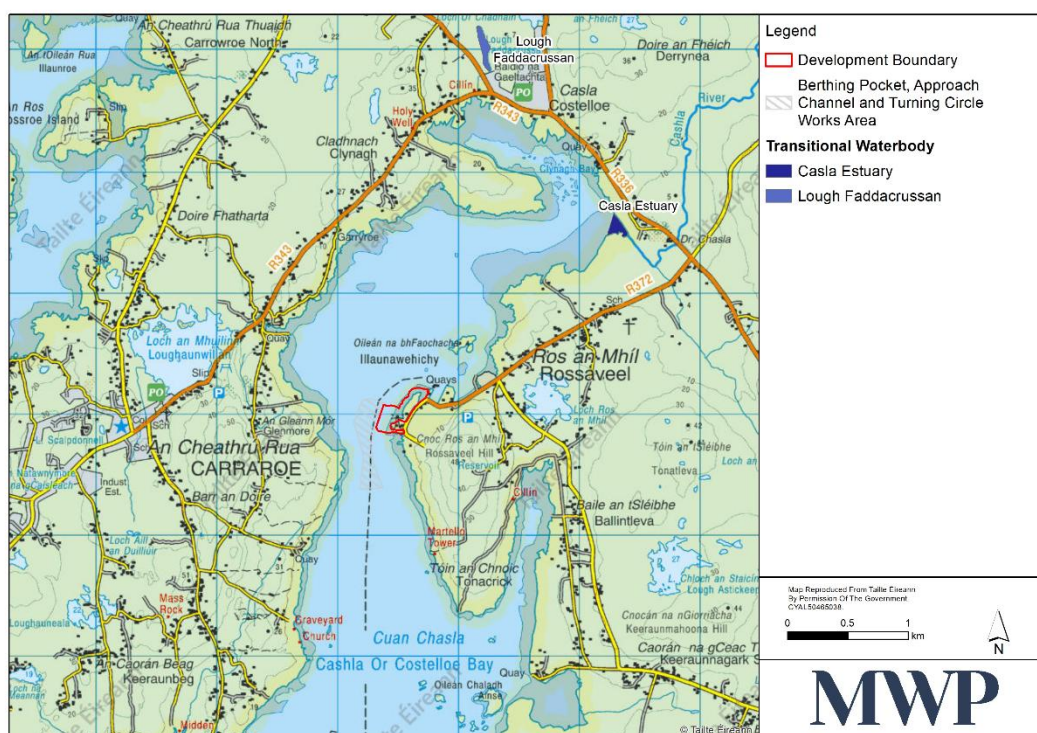


Figure 7-6: Transitional Waterbodies in the vicinity of the Development

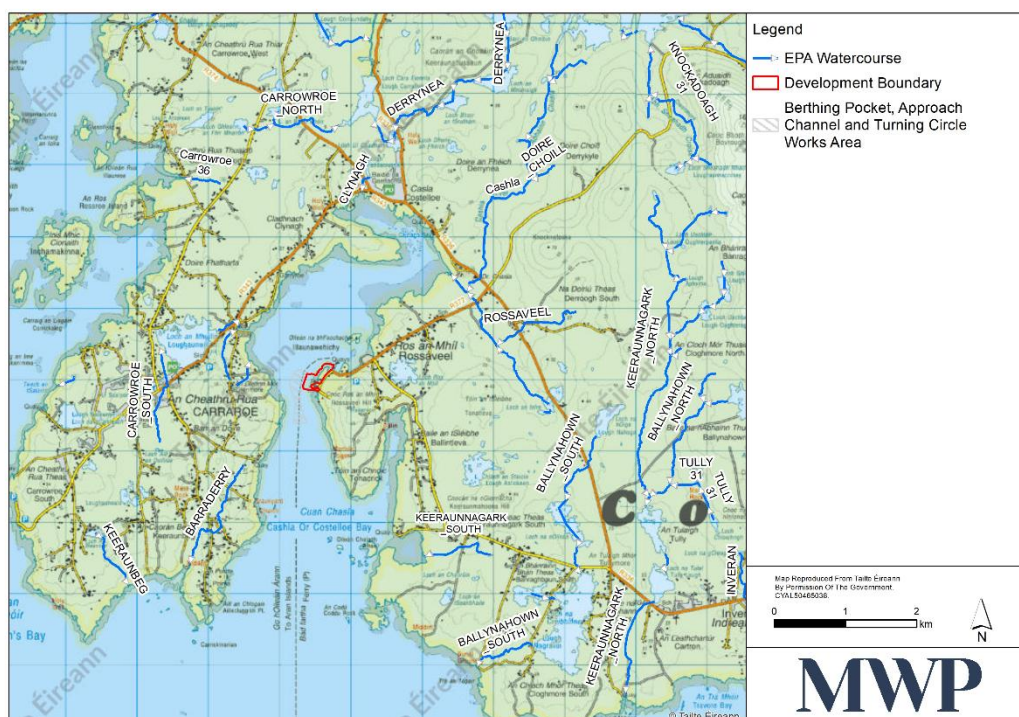


Figure 7-7: Watercourses in the vicinity of the Development

7.4.2 Hydrogeology

7.4.2.1 Bedrock

A geophysical survey consisting of a sub bottom profiling and side scan sonar surveying was undertaken by Hydrographic Surveys Ltd at Ros an Mhíl Harbour main channel on the 19th and 20th of January 2016 prior to the submission of the 2017 application. This was performed using a Sub Bottom Profiler to read the ground surface in the main channel and provide information on the features of the seabed. Quaternary geology in the area is representative of glacial deposition occurring in the harbour in the form of large boulders and boulder clay. Within the sheltered area of the harbour there are deposits of alluvium comprising of an organic silt/clay with shelly horizons. There were also occasional pockets of peat recorded, interspersed within the alluvium. Carbonate sands and gravels were also identified.

The harbour itself was underlain by granite bedrock of the Galway Granite Batholith, which is of Devonian age. The granite occurred in two main types, the Shannawona Granite and Banded Zone Granite. The Shannawona Granite outcrops in the main channel area and consisted of pale grey speckled monzogranite with megacrysts of pink potassium feldspar and green plagioclase feldspar. The Banded Zone Granite outcrops in the inner harbour and consisted of pale grey speckled pink granodiorite mixed with a darker mafic quartz diorite. Microdiorite enclaves were found throughout the granites, which possibly relate to earlier dykes that were engulfed during the granite intrusion. The area has been affected by glacial erosion, and the granite bedrock has been severely eroded to form low-lying hills. Large boulders, moraine and glacial till have been sporadically deposited throughout the area. Glacial till was not encountered in any of the marine boreholes in the harbour, although boulders of glacial origin were intersected at many locations.

The area of the development is classified as infralittoral rock by the EU Sea Maps. Seabed surveys by INFORMAR didn't proceed as far into the bay where the development is located, but data gathered further out matches that provided by the EU Maps, with the seabed in the area consisting of infralittoral rock and biogenic reefs.

7.4.2.2 Groundwater Body and Vulnerability

The development is located in the Spiddal groundwater body, EPA code IE_WE_G_0004. It contains the catchments of the Corrib, Errif-Clew Bay and Galway Bay North. The groundwater body is deemed 'Not At Risk' under the WFD and in the most recent monitoring results available, 2016-2021, was deemed to have an overall value status of 'Good'.

Groundwater Vulnerability represents the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability in the area of the development is classified as 'X – Rock at or Near Surface' in the majority of the area, with some areas of classification 'E – Extreme Vulnerability'.

7.4.2.3 Aquifer Classification

An aquifer is an underground body of water-bearing rock or unconsolidated materials from which groundwater can be extracted in useful amounts. The Aquifer in the area of the development is classified as a 'Poor Aquifer' (PI), defined as Bedrock which is generally unproductive except for in Local Zones.

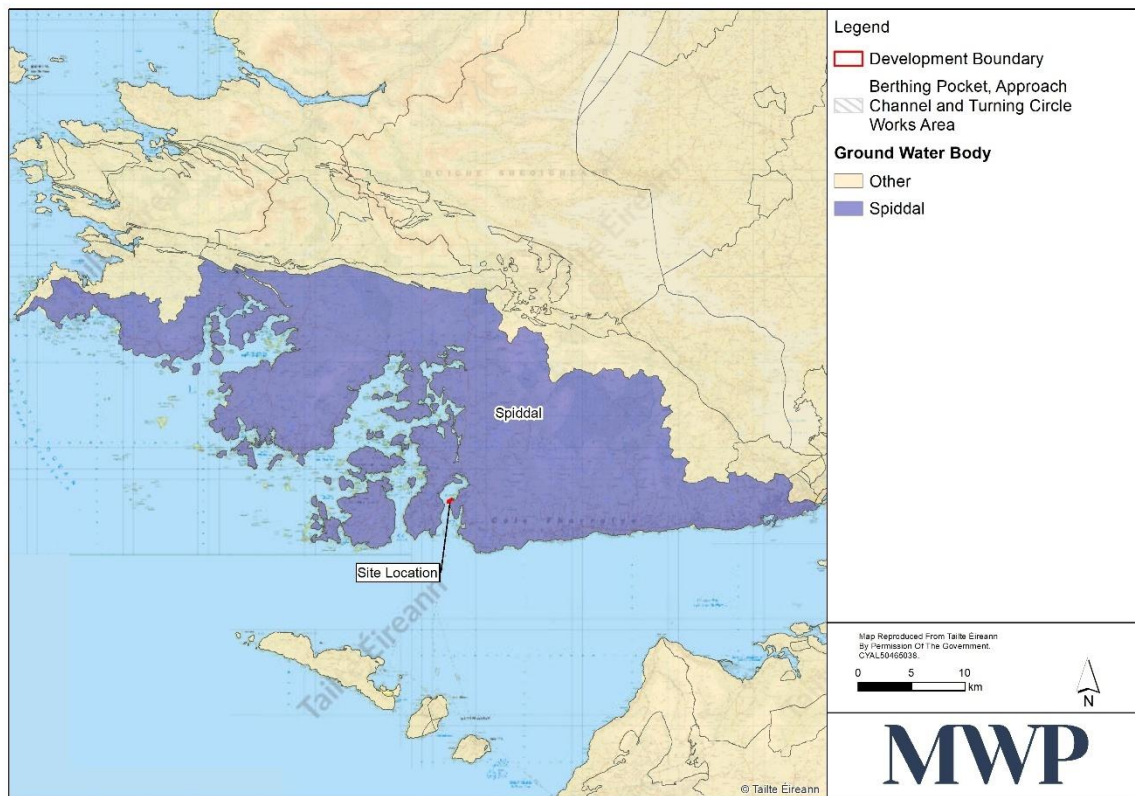


Figure 7-8: Spiddal Groundwater Body

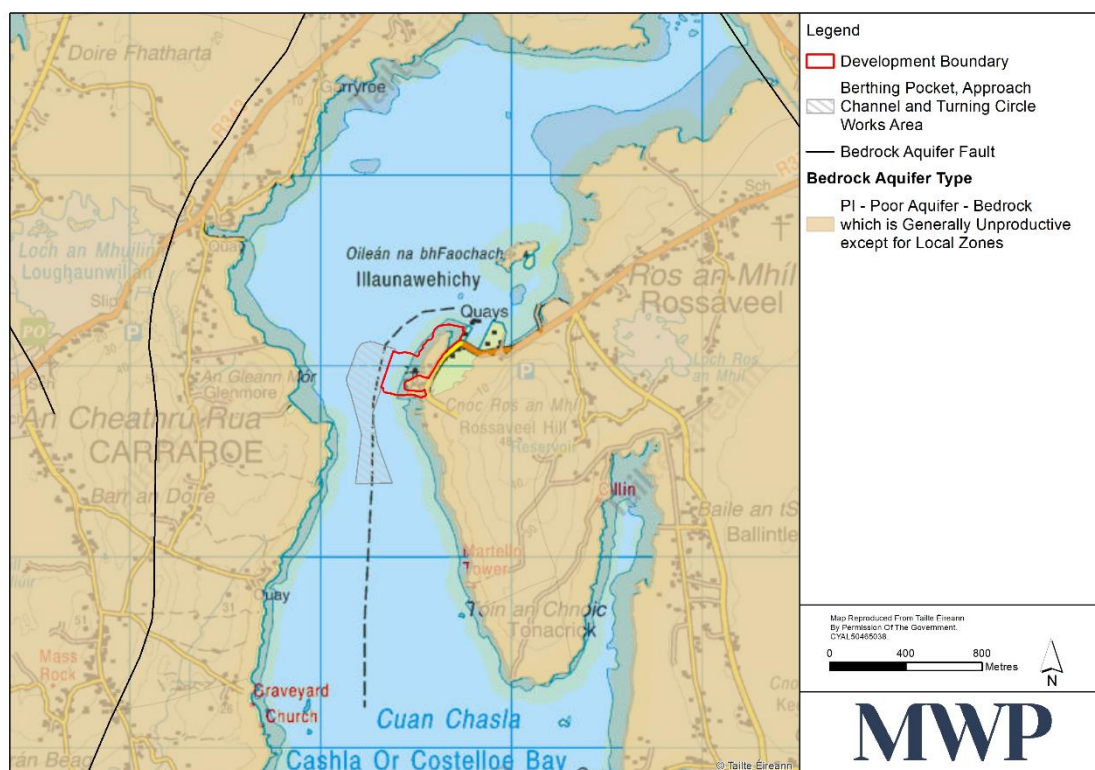


Figure 7-9: Groundwater Aquifer

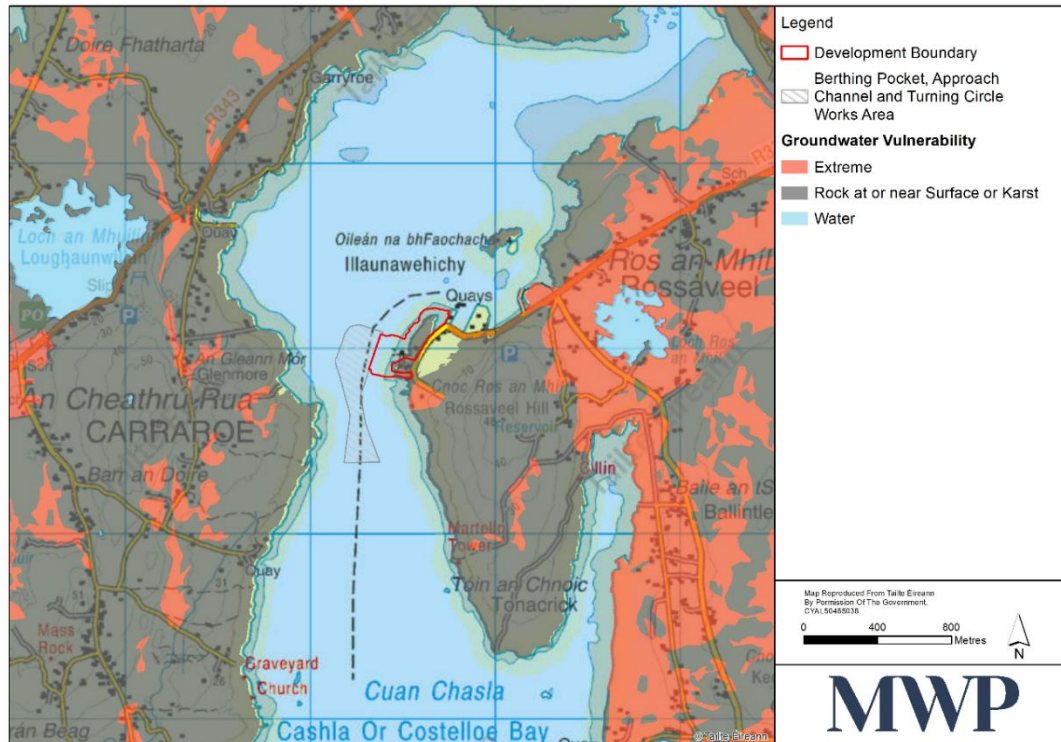


Figure 7-10: Groundwater Vulnerability

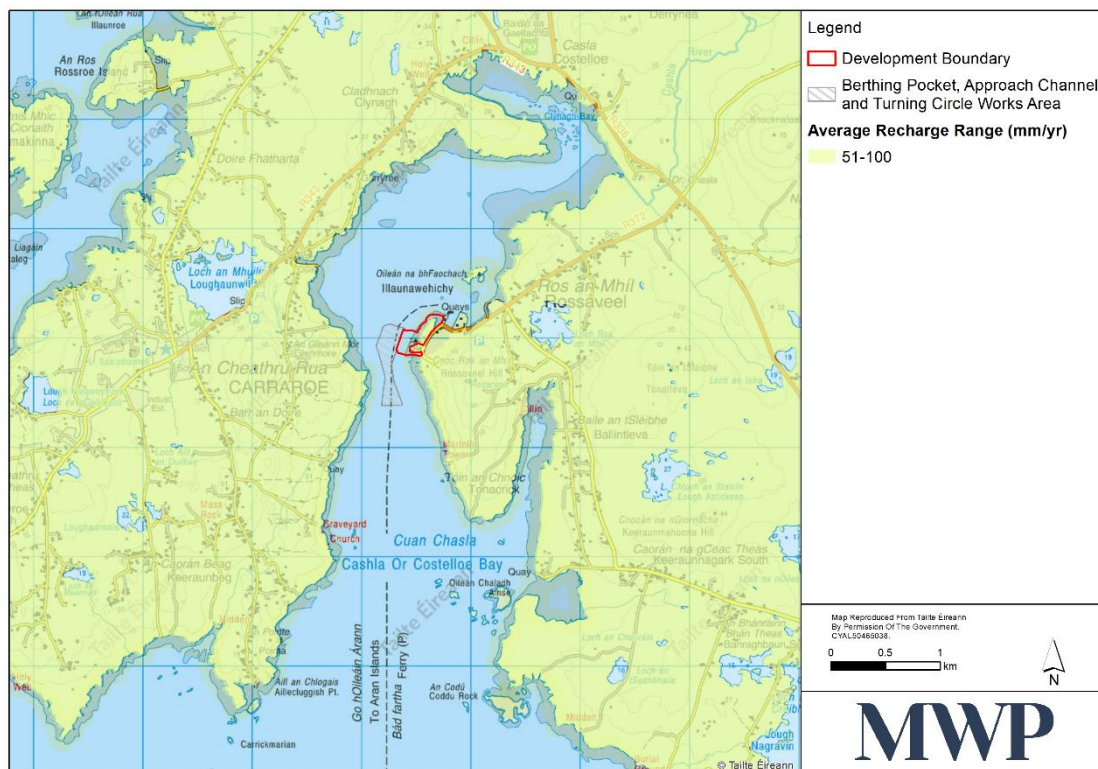


Figure 7-11: Groundwater Recharge Rate

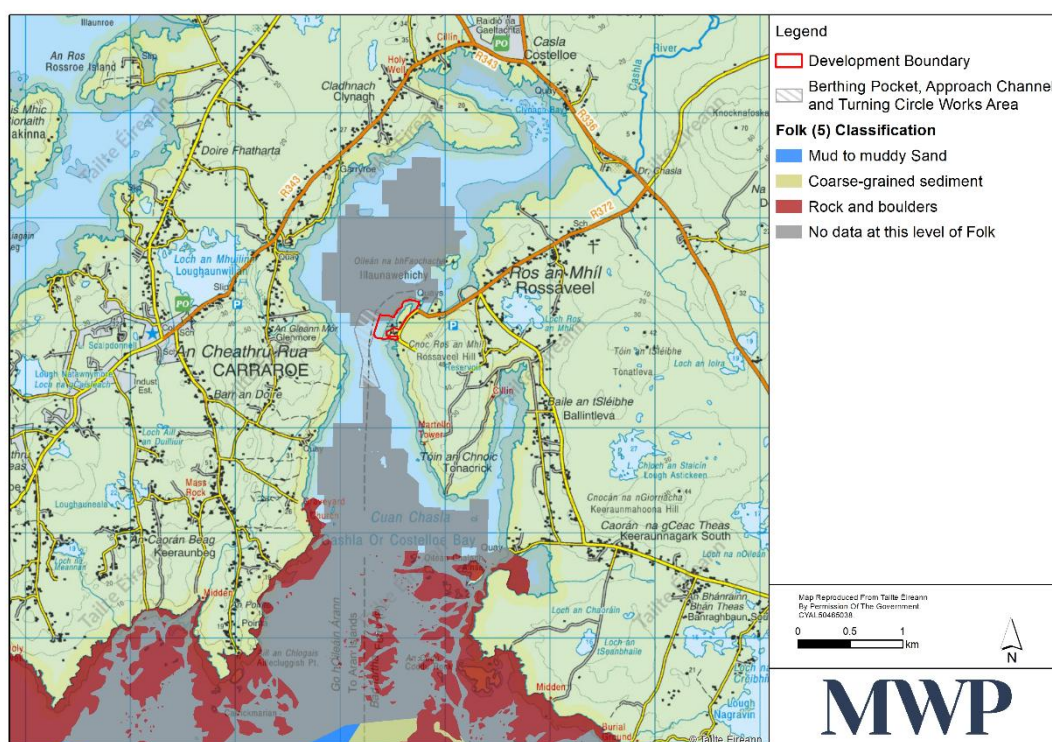


Figure 7-12: Seabed Classification

7.4.2.4 Abstractions (Wells and Springs)

There are several waterbodies designated for Abstraction for Drinking Water under Article 7 of the WFD. These are designated as ‘All bodies of water used for the abstraction of water intended for human consumption providing more than 10m³ a day as an average or serving more than 50 persons, and those bodies of water intended for such future use’.

All groundwater bodies in Ireland are designated for abstraction for drinking water under Article 7 of the WFD. However, there are no wells and springs designated for abstraction in the vicinity of the development.

7.4.3 Flood Risk

A Flood Risk Assessment (FRA) was conducted by Hydro Environmental Limited in 2016/7 (see **Volume III, Appendix 7B** of this rEiAR). The FRA was conducted in accordance with the requirements of the OPW and DoEHLG jointly published “The Planning System and Flood Risk Management” which is aimed at ensuring a more consistent, rigorous and systematic approach to fully incorporate flood risk assessment and management into the planning system. The guidelines set out how to assess and manage flood risk potential and includes guidance on the preparation of flood risk assessments by developers. The recommended stages of assessment are:

- Screening Assessment – to identify whether there may be flooding or surface water management issues related to a plan area or development site that may warrant further investigation;
- Scoping assessment to confirm sources of flooding that may affect a plan area or development site, to appraise the adequacy of existing information and to scope the extent of the risk of flooding and potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures; and

- Appropriate risk assessment: to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a development, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

The development site is located in an area designated as Flood Zone A. This is an area with the highest probability of flooding, exceeding 0.5% for coastal areas, meaning there is a greater than 1-in-200 chance of coastal flooding occurring in these zones.

7.5 Description of Likely Effects

7.5.1 Construction Phase Activities Overview

According to the 2017 EIS and the development construction works were expected to take 25 months in total. A total of 16 months of construction works were completed between January 2023 and the 20th May 2024.

The previous development works included:

- Mobilisation and development of the construction compound and facilities;
- Reclamation works – Rock fill material was imported to reclaim land from the sea and raise the ground level to the high-water mark (+5mCD). This reclaimed land was then used as a construction surface; Sequential construction and movement of the 20 drilling and blasting platforms over the quay wall and berthing pocket using imported quarry rock;
- Dredging works to remove the blasted seabed and construct the protective berm around the quay wall trench;
- Installation of 75m of rock armour revetments on the northern and southern ends of the reclamation area;
- Installation of the on-site concrete batching plant;
- Offsite manufacture and delivery of precast concrete caissons. 358 were manufactured and 92 were delivered to site;
- Offsite manufacture of the L-shaped blocks for wall and foundation beams;
- Installation of 48m of quay wall foundations.

Upon confirmation that the planning permission had expired and would not be extended, all construction materials, equipment and facilities were dismantled and removed from the site.

There are several factors that could affect water quality in the vicinity of the development. This includes effects from reclamation, dredging, blasting, pollution from oil/fuel spills, and sedimentation from flood events.

7.5.2 Construction Phase Mitigation Measures

No mitigation measures were deemed to be required to offset the impact on water quality during the dredging activities. Previous monitoring during these activities on Ros an Mhíl Harbour has indicated that there was no significant correlation between the dredging activity and the fluctuation in water quality.

The contractor ensured that no harmful materials were deposited into surface water, including sea, water courses, drainage ditches/pipes, on or adjacent to the site and they complied with the requirements of the Public Health Acts and Fisheries Acts. There was adherence to Guidelines for minimising impacts on water quality and fisheries in relation to construction including but not limited to, CIRIA C532 “Control of water pollution from

construction sites – Guidance for consultants and contractors”, Inland Fishereies Ireland guidelines and TII Guidelines.

A number of mitigation measures were contained in the 2017 EIS and the subsequent Construction and Environmental Management Plan (CEMP) produced by the contractors (Ward and Burke) that would prevent any additional potential impact to water quality during the construction phase of the development. These included:

- Water was not allowed to escape directly from the construction works staging and storage areas and enter harbour waters. There was provision for suitable means of catching any escaped water to prevent unwanted materials/potential contaminants from entering the Harbour”;
- Where it was deemed necessary, there was provision for a temporary drainage system which was separate from any general site drainage;
- Suitable bunded chemical and fuel storage were provided;
- Spill kits and hydrocarbon adsorbent pack were located around the site;
- Refuelling of vehicles and machinery was undertaken in designated hard standing areas;
- Stockpile areas for materials were bunded to prevent surface water runoff into the harbour waters;
- Monitoring buoys were deployed to measure turbidity and dissolved oxygen and relay information to the onshore station. These were be fitted with alarms to notify the Contractor and Harbour Master should the limits be exceeded;
- Concrete pouring was not undertaken during periods of heavy rainfall to prevent unnecessary runoff impacting water quality;
- Quick setting concrete mixes were used; and,
- Designated concrete washout pits in the form of watertight skips were used. These were located away from the water’s edge.

7.5.3 Construction Phase Effects Assessment

7.5.3.1 Drilling, Blasting, Dredging

There was a change in the dredging, drilling and blasting method from the methods previously proposed and assessed in the 2017 EIA. Rather than using sea-based jack-up pontoons with mounted hydraulic marine drilling, the 2023/4 drilling and blasting works used an alternative land-based approach. The method adopted was to fill the marine area above each of the 20 sections of the quay wall trench and berthing pocket with rockfill up to the high-water level to create a blasting platform. Each segment to be blasted was first filled with rock to the high-water level and then holes at 2.5m cc were drilled into the fill material and bedrock to 2.5m below the required depth of the quay wall foundations level. These holes were then filled with casings and explosives and blasted. The dredged rock was then removed with excavators and used to construct a platform for the next segment to be blasted. As the blasting progressed the dredged rock was used to construct a protective berm around the quay wall trench. This berm provided additional mitigation by reducing potential turbidity effects in the sea outside the berm.

Previous water quality monitoring was carried out by DAFM at three locations during an historical dredging and disposal campaign in Ros an Mhíl Harbour in 2004. The monitoring found that dredging and disposal activities could not be correlated to any significant changes in water quality, either in terms of an improvement or deterioration in water quality across the range of parameters measured. Monitoring adjacent to Ros an Mhíl Harbour indicated a turbidity spike during a period when dredging of soft material was taking place but otherwise there was no significant correlation between dredging activities and the fluctuation in water quality.

Consequently, the dredging, drilling and blasting activities in the sea were not expected to have a significant effect on water quality, turbidity or DO.

Results of the monitoring of turbidity and Dissolved Oxygen (DO) during the 2023/4 construction works (see **Volume III, Appendix 7A**) show that while there were some exceedances of the limits imposed, none were of a long duration, and the increase in suspended sediment was dispersed quickly by currents in the bay.

Localised temporary increases in suspended sediments were not of the concentrations or duration that would be detrimental to water quality. Seagrass beds in the area also aid in preserving and increasing water quality. These seagrass bed species are discussed in **Volume II, Chapter 8** Marine of this rEIAR.

Best practice guidelines and the pre determined mitigation was followed and resulted in no significant negative effects on water quality in the area of the development.

Overall, the effects on turbidity and DO from the already performed construction works is considered negative, not significant, local, brief, and reversible.

Table 7-1: Rating of Post-mitigation Construction Effects from Dredging, Drilling and Blasting

	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Reclamation, blasting, and dredging	Negative	Not Significant	Local	Brief	Reversible

7.5.3.2 Land reclamation

Most of the proposed 2.4ha of land reclamation work up to the +5mCD level was undertaken during the previous construction works behind (east of) the quay wall. This reclamation work was undertaken using trucks, excavators and imported rock fill materials from local quarries. Small quantities of the dredged rock material were also used to fill the reclamation area.

Results of the monitoring of turbidity and DO during the 2023/4 construction works (see **Volume III, Appendix 7A** of this rEIAR) show that while there were some exceedances of the limits imposed, none were of a long duration, and the increase in suspended sediment was dispersed quickly by currents in the bay.

Best practice guidelines and the pre-determined mitigation was followed during the construction works and resulted in no significant negative effects on water quality in the area of the development.

Overall, the effects on turbidity and DO from the already performed construction works is considered negative, not significant, local, brief, and reversible.

Table 7-2: Rating of Post-mitigation Construction Effects from Land Reclamation Works

	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Reclamation, blasting, and dredging	Negative	Not Significant	Local	Brief	Reversible

7.5.3.3 Surface Water Run-off

Inadequate drainage management during the construction phase can lead to a variety of pollutants entering the water and affecting its quality status. This can include run off from machinery and vehicles, sediment runoff from material and resource stockpiles, and welfare facilities discharge if not secured and managed properly. The runoff can have significant effects on water quality, affecting turbidity, aquatic habitats and species. The runoff would enter Cashla Bay, and currents in the bay would disperse this around the bay and outward to Galway Bay. Without proper mitigation during construction, surface water drainage effects are considered to be negative, significant, regional, short-term, direct and indirect.

Surface water run-off management plans were implemented from the CEMP which included:

- Excavated and dredged material was not allowed to fall back into the harbour waters in an accidental manner and was not stored or placed in the waters edge;
- Water was not allowed to escape directly from construction works staging and storage areas and enter harbour waters;
- On-site storage areas were provided with a temporary drainage system that remained separate from any general site drainage and cut-off ditches;
- There were stockpiles of various materials at different stages of the project e.g. rock armour to be reused, new rock armour, dredged material and potentially some additional fill for breakwater structures. These stockpiles were bunded and located within the allocated stockpile areas. Imported materials were only ordered as and when they were required to reduce unnecessary stockpiles. All stockpiles were inspected regularly.

Table 7-3: Rating of Post-Mitigation Construction Effects from Surface Runoff

	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Surface Runoff	Negative	Not Significant	Regional	Short-term	Direct and Indirect

7.5.3.4 Oils and Fuel Usage and Storage

Spills of oil and/or fuels can have a significant effect on water quality were they to occur. This can happen from operating machinery, leaks from containers and vehicles and human error. Due to the developments proximity to Cashla Bay, spills of fuel/oil can be dispersed quickly by currents active in the bay. There were no recorded incidents of oil or fuel spills that resulted in a pollution event that affected water quality in the area of the construction works.

Table 7-4: Rating of Post-Mitigation Construction Effects from Oil and Fuel spills

Impact	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Oil and Fuel Spills	Negative	Not significant	Regional	Short-term	Direct and Indirect

7.5.3.5 Use of Concrete

The use of concrete during the construction phase had the potential to negatively impact water quality through increased sediment, disturbance to species and potential leakage or run-off into the harbour waters causing pollution. There was also a concrete batching plant located on site that had potential to impact the water quality had there been inadequate drainage or a leak. No losses of concrete to the harbour were recorded during this phase of works.

A number of mitigation measures were in place regarding the use of concrete, which included:

- Concrete pouring was not undertaken during periods of heavy rainfall
- Quick setting mixes were used
- Designated washout pits in the form of polythene lined skips or polythene lined washout pits were used
- Washing out of truck mixers, concrete pumps, skips and other items of plant and equipment needing to be cleaned of concrete only took place at the designated area, away from the waters edge;
- Ends of pump hoses were secured by means of a rope during concreting over and adjacent to waters to prevent the discharge hose accidentally depositing concrete away from the pour site;
- Where concrete was placed by means of skips, the opening gates of the delivery chute were securely fastened by a lock chain to prevent accidental opening of the skip over water;

Table 7-5: Ratings of Post-Mitigation Construction Effects from Use of Concrete Based Products

Impact	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Concrete Spills	Negative	Significant	Regional	Short-term	Direct and Indirect

7.5.3.6 Flooding

The development is located in a flood zone and is susceptible to flood events with a greater than 1-in-200 chance of coastal flooding occurring. Flooding affects water quality in a variety of ways. Flood waters can interact with pollutants and chemicals, such as fuel and oils, that can be brought out to sea when the flood waters recede. The concrete batching plant located on site could also be affected, with concrete entering the water during a flood event. This can also affect material stockpiles such as gravel, sand and manufactured materials such as piping and steel rebar. The flooding could also cause erosion of the environment by disturbing soils and causing sedimentation in the water.

During the construction works, the construction compound and materials storage areas were located on existing land above the high-water levels. No materials except the pre-cast caissons were temporarily stored on the reclaimed land that remained susceptible to flooding. Once construction works ceased, all materials and equipment were removed from the reclaimed area and the whole construction site.

Best practice guidelines and the pre-determined mitigation was followed during the construction works and resulted in no significant negative effects on water quality in the area of the development.

Post-mitigation, the effects of flooding on the receiving environment are considered to be negative, very significant, regional, short-term, direct and indirect.

Table 7-6: Rating of Post-Mitigation Construction Effects from Flooding

	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Flood Event	Negative	Very Significant	Regional	Short-term	Direct and Indirect

7.5.4 Current Phase Effects

The site was completely cleared of all equipment, facilities and materials when works ceased on the 20th May 2024. The site remains un-used and has been fenced off.

The results of hydrodynamic modelling conducted in 2002 (see **Volume III, Appendix 7C** DIVAST Modelling Studies and **Appendix 7D** Water Level and Wave Modelling Studies of this rEiAR) indicated that the construction of the deep water quay would not significantly affect the current hydrodynamic regime in Ros an Mhíl Harbour.

The flood risk to the deep water quay is coastal, from either tide surge events in isolation or tides in combination with wave climate. Based on the results of the FRA, the minimum level of the deep water quay was recommended to be +6.7mCD (+3.8m OD Malin) to protect against the present day 200-year return period tidal flood level. The current level of the site is +5mCD. Consequently, the site is susceptible to occasional inundation during spring high tides and other extreme weather events. The clearing of the site has reduced the potential for any contamination of water if the vacant site were to experience a flood event in this period between previous construction works and works to be completed.

DAFM has reported that there was no damage to the incomplete harbour facilities as a result of storm Éowyn in January 2025. This was the most severe known storm to have hit the west coast of Ireland in living memory. Subsequent bathymetric surveys of the site have confirmed the lack of damage. The location of the harbour deep within a sheltered inlet north of the main Galway Bay provides considerable protection to the development site.

Overall, the effects on sea water quality during the current phase of the development are considered to be slight, regional, short-term and reversible.

Table 7-7: Rating of Post-Mitigation Current Phase Effects from Surface Runoff

Impact	Quality of Effect	Post-Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Surface Runoff	Negative	Slight	Regional	Short-term	Reversible

7.6 Remedial Mitigation and Residual Effects

The mitigation measures identified above were adhered to and there were minimal effects on the water quality in the vicinity of the site during the construction of the works completed to date. There is no need for any remedial mitigation measures. Residual effects are therefore considered to be not significant and of a temporary duration for the previous works carried out, see **Table 7-8**.

Table 7-8: Ratings of Effects Pre and Post Mitigation

Impact/Activity/Receptor	Quality of Effect	Post-Mitigation Significance Rating	Remedial Mitigation Measures	Residual Significance Rating
Construction Effects				
Reclamation, Dredging and Blasting	Negative	Not Significant	None	Not Significant
Land Reclamation	Negative	Not Significant	None	Not Significant
Oil and Fuel Spills	Negative	Not Significant	None	Not Significant
Cement Product Spills	Negative	Not Significant	None	Not Significant
Flood Risk	Negative	Not Significant	None	Not Significant
Surface Run Off	Negative	Not Significant	None	Not Significant
Effects from Current Incomplete State of the Site				
Flood Risk	Negative	Not Significant	Complete the Quay Wall	No Effect

Currently the development is not operational as all works ceased on the 20th of May 2024. Upon the suspension of works, all equipment, materials and temporary facilities were removed from the site and the area was fenced off. The removal of material stockpiles, equipment and facilities avoids any potential negative effects on water quality from flooding were it to occur.

As the site is currently at +5mCD, it is currently susceptible to occasional inundation and flooding. The remedial mitigation of this effect would be to complete the deepwater quay development.

7.7 Conclusion

The works completed to date have been assessed, and it is concluded that the only remedial work required is to complete the quay wall development as proposed. Monitoring during the construction works to date took place and mitigation measures were followed, with no reported incidents that had a significant negative effect on water quality. No significant effects are considered on water quality regarding the completed works.

7.8 References

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