



REMEDIAL ENVIRONMENTAL IMPACT ASSESSMENT (rEIAR)

Ros an Mhíl Deep Water Quay

Chapter 15 Interaction of the Foregoing

Department of Agriculture, Food and the Marine

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15. Interaction of the Foregoing

15.1 Introduction

This rEIAR supports a substitute consent application for the Ros an Mhíl Deep Water Quay development. In accordance with the requirements of the 2014 EIA Directive, the rEIAR has presented the environmental assessments of the development works under each required environmental factor. Where relevant, the interaction between the factors, which is the interactions between specific environmental aspects and effects, are already addressed within each of the individual assessment topic areas or chapters of this rEIAR.

The purpose of this Chapter is to draw attention to important interactions and interdependencies between one factor or topic and another. Consequently, this Chapter now highlights those interactions of the environmental aspects and topics previously detailed and assessed throughout this EIA. The potential for interactions between one aspect of the environment and another can result in direct or indirect effects, which may be positive or negative. This Chapter is completed based on a desktop review and by provision of a matrix to present the main interactions. The assessments and results have previously been presented in the preceding chapters of this EIA.

15.2 Identification of Environmental Effects

While all environmental aspects can be inter-related to some extent, the following outlines the key interactions identified between each of the various environmental subject areas considered in this rEIAR for the construction phase of the Development.

A matrix has been generated to summarise the relevant interactions and interdependencies between specific environmental aspects. The matrix is presented in **Table 15-1**. It contains each of the environmental topics, which were considered as part of this environmental impact assessment, on both axes. These interactions have been identified for the construction [C] phase of the development. Full details of the significance of the effects and the relevant interactions of the environmental aspects along with any mitigation are discussed within each of the individual preceding Chapters.

A number of interactions have been identified in the rEIAR. These are set out and have been addressed in the relevant chapter.

15.2.1 Population and Human Health

Interactions with population and human health during the construction of the Ros an Mhíl Deep Water Quay were potentially associated with traffic, noise and vibration, dust emissions, landscape and visual effects. Construction-related vehicle movements, including deliveries and heavy machinery, had the potential to affect local amenity and safety, but these were carefully managed through mitigation measures such as traffic routing, scheduling, and dust suppression.

Noise from construction traffic along local roads was the activity mostly likely to have noise effects. These effects were assessed to be **localised, short-term** and **not significant**. Noise and vibration from machinery, dredging, drilling, and blasting on the development site itself were limited to daytime hours and the site's distance from potential sensitive noise receptors effectively mitigated against any significant noise effects.

Landscape and visual changes, including temporary construction compounds and equipment, were limited in duration and extent and did not deviate significantly from existing port activities in the area, while material assets such as water, foul-water and electrical services as well as ferry services and fisheries infrastructure continued to operate without disruption.

Overall, while interactions were observed across multiple environmental factors, they were effectively controlled, **short-term, localised, and not significant**.

15.2.2 Traffic and Transportation

Construction traffic interacted with a range of environmental topics through the movement of heavy vehicles, delivery convoys, and staff transport to the harbour site. Traffic emissions and dust generation contributed to short-term interactions with air quality and climate, although these were mitigated through wheel washing, scheduling, and best practice management.

Increased vehicle movements generated noise and vibration along local access routes, interacting with nearby receptors and contributing to temporary not significant nuisance effects.

There was potential for traffic during construction phase to interact with terrestrial biodiversity in the area. Given the likelihood of dust emissions during construction, a Dust Minimisation Plan was developed and implemented. This plan aimed to reduce particulate matter release and its potential effect on surrounding flora and fauna. Dust mitigation measures included regular cleaning and maintenance of site roads, application of water sprays to roads and exposed surfaces prone to dust generation, enforcement of reduced vehicle speed limits and utilisation of wheel wash facilities. Through the implementation of these biodiversity protection measures, potential construction-related effects on terrestrial and aquatic ecosystems were anticipated to be negligible. Continuous monitoring and adaptive management were employed to ensure that biodiversity values were safeguarded throughout the construction period.

Vehicle movements over reclaimed land and construction areas interacted with land and soils through compaction and disturbance, but this was confined to the development footprint.

Traffic routing and construction access management ensured that water and marine environments were protected from run-off or accidental spillage. Visual and landscape interactions arose from increased vehicle activity and temporary congestion, particularly during peak construction, affecting harbour users and visitors.

Material assets such as ferry services and port infrastructure were managed to maintain access and operational continuity, while cultural heritage features along access routes were not physically affected due to adherence to designated transport corridors.

Overall, while construction traffic interacted with several environmental topics, all effects were **short-term, localised, and not significant**.

15.2.3 Terrestrial Ecology

Construction activities with potential to affect terrestrial ecology were closely linked with other environmental factors. Traffic and transport movements associated with material deliveries and spoil removal had the potential to cause habitat disturbance, dust generation and noise, indirectly influencing flora and fauna within and around the harbour. Works affecting land and soils, such as reclamation and dredging, interacted directly with marine and intertidal habitats, altering seabed structure and temporarily increasing sediment loading, which in turn influenced water and marine ecology.

Air and climate interactions were primarily through dust and emissions from plant and vehicle use, which could settle on nearby habitats or reduce air quality for sensitive species, though controls limited these impacts. Noise and vibration from dredging, blasting, drilling, and heavy machinery operations overlapped with ecological sensitivities, with potential disturbance to birds, fish and marine mammals, although implementation of mitigation restricted these effects to **temporary, localised** and **not significant** levels.

15.2.4 Water

During the construction phase there was potential for the effects associated with surface water and ground water to interact with population and human health (due to water quality), land and soils (soil characteristics and contamination) and biodiversity (habitat related to water quality).

The assessment indicates that interactions were largely minor and temporary. For example, dredging, blasting, and land reclamation could have affected water quality, turbidity, and marine biodiversity, but monitoring and mitigation measures ensured these effects were brief, local, and reversible. The interactive effects were **short term** and **insignificant**.

Overall, the completed works and the current cleared state of the site do not result in any significant combined or cumulative effects. The main interaction of note relates to flood risk, which has potential links to water quality, land management, and material assets; this is effectively managed by the site being cleared and above high-water levels. No residual significant interactions were evident or are anticipated, and any minor temporary effects observed during construction were controlled and reversible, ensuring the overall environmental integrity of the area is maintained.

15.2.5 Marine

During the construction phase, there was potential for interactions between the effects on the marine environments/species, noise effects and effects on water quality. These effects were associated with the physical filling of the land reclamation area and the removal/excavation of rock and sediments as a result of dredging, drilling and blasting which had marine noise and water quality effects. Excavation by dredging in the berthing pocket and quay wall trench would have resulted in the marine noise and water quality effects associated with the abrasion, penetration and removal of substrate and compaction of substrate from mechanical action of dredgers, from placement of spuds or as consequence of rock drilling and blasting.

There was potential for accidental spills or leaks of fuels, oils, or hydraulic fluids from construction equipment operating near or on the water. Such events, though unlikely if managed properly, could cause localised contamination and acute toxicity to marine organisms.

To mitigate these risks, best-practice construction environmental management practice was maintained. Key measures included bunded fuel storage, spill kits, and regular equipment checks to prevent hydrocarbon leaks, marine mammal monitoring and timing in water works outside biologically sensitive periods, where possible. With these controls in place, the residual impact to marine ecology was predicted to be **not significant, temporary**, and **localised**.

15.2.6 Land and Soils

The construction works at Ros an Mhíl Deep Water Quay had the potential for the interaction of land and soils effects with other environmental components, including water quality, biodiversity, air quality, noise, traffic and transport, human health and cultural heritage. Reclamation, dredging, drilling and blasting could have mobilised

sediments, disturbed habitats, generated dust and noise, and posed minor risks from radon or ground disturbance. The filling, excavation, stockpiling and movement of rock material for the project had the potential to effect air quality from increased dust emissions associated. The delivery and removal of soils, rock, and fill to and within the site had the potential to interact with marine species, as well as with traffic and transport. The construction and earthworks also caused some visual and landscape effects. A potential adverse effect on surface water arose from the construction works, which could have had knock-on effects on marine biodiversity and ecology.

The project was developed in line with the drainage proposals for surface water management detailed in the Construction Environmental Management Plan (CEMP) (rEIAR **Volume III, Appendix 2B**) as part of the civil works to ensure adequate protection of watercourses during the construction phase. The associated effects and interactions for each aspect were addressed individually in the rEIAR chapters.

All works were carried out on reclaimed or marine areas, and mitigation measures implemented through the CEMP (rEIAR **Volume III, Appendix 2B**) such as sediment control, dust suppression, controlled blasting, safe storage of materials, and water quality, vibration and marine mammal monitoring effectively minimised these interactions. No archaeological features were impacted, and surrounding terrestrial habitats were largely unaffected. Consequently, all interactions between land, soils, and other environmental factors were controlled, and the overall significance of interactions is considered **neutral** and **not significant**.

15.2.7 Air and Climate

There was potential for emissions to air during the construction phases in the forms of temporary fugitive dust from fill activities and vehicle movements that could potentially have adverse interactive effects on population and human health of nearby dwellings and biodiversity.

Dust generated on-site during the construction phase was not likely to have significant affect the local air quality due to the site location, short duration and wet climate of the area; however, there was the possibility of disturbance occurring from dust generated in the vicinity of the site entrances and along the local public road which could affect road users and neighbouring residents. The dust mitigation measures presented in **Chapter 12, Air and Climate**, minimised the risk of any such effects.

The adverse interactions of air quality/climate, population and human health, traffic/transport and land and soils effects were likely to result in **not significant** adverse effects during the construction phase.

15.2.8 Noise and Vibration

Noise and vibration from construction works had the potential to interact with other environmental topics such as population and human health, terrestrial habitats and species and marine mammal and fish species; however, monitoring and mitigation measures ensured effects were minimal. Impacts on population and human health were not significant, with only a minor 1 dB night-time exceedance at an occasionally occupied receptor. Traffic noise increases were imperceptible, and biodiversity, water and marine receptors were not adversely affected due to the timing, location, marine mammal monitoring and related control of blasting and dredging activities. Land and soils were unaffected, as vibration levels remained below thresholds capable of causing structural or superficial damage.

Cultural heritage receptors, including the Martello Tower, were monitored, and pre- and post-construction assessments confirmed no damage. No indirect effects on the landscape, visual environment or material assets were identified, and post-construction monitoring indicates the acoustic environment has reverted to baseline

conditions. Overall, interactions between noise and vibration and other environmental topics are considered negligible.

15.2.9 Landscape and Visual

During the construction phase there was potential for short term not significant adverse interactive effects on population and human health in relation to landscape and visual effects related to the construction earthworks, machinery and traffic. However, as the works area forms part of the larger port facilities and activities, these activities resulted in no significant change in the landscape character or visual effects. The interactive effects were **short term** and **not significant**.

15.2.10 Archaeology and Cultural Heritage

Excavation works during construction had the potential to impact archaeology, cultural heritage, and land and soils. Since cultural heritage contributes to overall landscape character, any indirect effects on heritage could also influence landscape character. However, as no effects on heritage resources were anticipated and no underwater heritage resources were uncovered during the development works, these impacts were assessed as not significant, with any interactions resulting in **short-term, non-significant** effects.

15.2.11 Material Assets

The development works made use of existing roads, electricity and water supplies, but did not involve any disruption or adverse effect on these services or facilities. The only significant potential for interactive effects was between traffic and material assets. As the traffic effects were **short term, localised** and insignificant, the effects on the road facilities were also **not significant**.

Table 15-1 Summary of Interactions

	Population and Human Health	Traffic and Transport	Terrestrial Ecology	Water	Marine	Land and Soils	Air and Climate	Noise and Vibration	Landscape and Visual	Cultural Heritage	Material Assets
Population and Human Health		C		C		C	C	C	C		C
Traffic and Transport	C		C			C	C	C	C		C
Terrestrial Ecology		C		C		C	C	C			
Water	C		C		C	C					
Marine		C		C		C		C			
Land and Soils	C	C	C	C	C		C		C	C	
Air and Climate	C	C	C			C					
Noise and Vibration	C	C	C		C	C			C		
Landscape and Visual	C	C				C		C		C	
Cultural Heritage						C			C		
Material Assets	C	C									

	Interaction
	No Interaction

C	Construction Phase Effect
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15.3 Conclusion

A matrix was generated to summarise the relevant interactions and interdependencies between specific environmental aspects, and a significance rating was assigned. The matrix was presented and contained each of the environmental topics, which were considered as part of this environmental impact assessment, on both axes. These interactions were identified for the construction [C] phase of the project. Full details of the significance of the effects and the relevant interactions of the environmental aspects, along with any mitigation, were discussed within each of the individual preceding chapters. It was concluded that there were no significant interactions between any of the various environmental topic areas as a result of previous construction works on site.