MWP

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)

Ros an Mhíl Deep Water Quay

Chapter 15: Interactions of the Foregoing

Department of Agriculture, Food and the Marine

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15. Interaction of the Foregoing

15.1 Introduction

This EIAR supports an application for the proposed Ros an Mhíl Deep Water Quay development. In accordance with the requirements of the 2014 EIA Directive, the EIAR has presented the environmental assessments of the proposed 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 EIAR.

This chapter of the EIAR evaluates the potential interaction of effects, which the proposed development may have on the receiving environment and sensitive receptors.

15.2 Scope

Article 3 of EIA Directive 2011/92/EU as amended by Directive 2014/52/EU stipulates that "*The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors: (a) population and human health; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape; (e) the interaction between the factors referred to in points (a) to (d)*".

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 EIAR. There is potential for interactions between one aspect of the environment and another which can result in direct or indirect effects, and which may be positive or negative. Where relevant, interactions between specific environmental aspects and effects and the measures proposed to mitigate them are already addressed within each of the individual assessment topic areas of this EIAR (i.e. within Chapters 4 to 14).

However, there is also the potential for interaction between potential effects. The purpose of this chapter is to draw attention to interactions and interdependencies between one topic and another. 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 EIAR.

15.3 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 EIAR for both the construction and operational phases of the Proposed Development.

A matrix has been generated to summarise the relevant interactions and interdependencies between specific environmental aspects. The matrix is presented in Table 15-1below. 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 both the construction [C] and operation [O] phases of the proposed development. Full details

of the significance of the effects and the relevant interactions of the environmental aspects along with any proposed mitigation are discussed within each of the individual preceding Chapters.

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

15.3.1 Population and Human Health

During the construction phase there is potential for adverse effects on population and human health in relation to traffic and transport, dust emissions, landscape and visual, noise and vibration. Construction-related vehicle movements, including deliveries and heavy machinery, has the potential to affect local amenity and safety, but these will be carefully managed through mitigation measures such as traffic routing, scheduling, and dust suppression. These effects have an insignificant potential to pollute and create temporary disturbance for occupants of nearby dwellings. Noise and vibration from machinery, drilling, and blasting will be limited to daytime hours and controlled to protect sensitive receptors.

Landscape and visual changes, including temporary construction compounds and equipment, will be limited in duration and extent and did not deviate significantly from existing port activities in the area, while material assets such as ferry services and fisheries infrastructure will continue to operate without disruption. The interactive effects are likely to be short term and insignificant.

During the operational phase there is potential for long term adverse effects on population and human health in relation to noise and vibration effects. The interactive effects are likely to be long term and insignificant.

During operation, it is considered that the proposed deep-water quay will represent an extension of an established harbour facility and will consolidate an area of underutilised reclaimed shoreline that currently detracts from the integrity of the harbour. On balance of these reasons, the magnitude of landscape/seascape effect is deemed to be Medium-Low.

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

15.3.2 Traffic and Transportation

Traffic associated with the proposed construction works has the potential to generate dust generation contributing to short-term interactions with air quality and climate although these will be mitigated through wheel washing, scheduling and best practice measures. Traffic during construction can interact with noise and vibration, population and human health, land and soils and terrestrial biodiversity.

The use of roads during construction will give rise to increased traffic and is likely to create some short-term inconvenience to road users (with interaction between traffic and population and human health, air quality, material assets, landscape and visual, and noise and vibration effects). The interactive effects are likely to be short term and insignificant. A Construction-phase Traffic Management Plan will be implemented to manage traffic coming to and from the site.

Due to the very low volume of additional traffic added to the roads due to the operational of the proposed development, the potential for long term adverse interactive effects on population and human health, landscape and visual, and noise and vibration effects is considered imperceptible. The interactive effects are likely to be long term and not significant.

15.3.3 Terrestrial Ecology

Construction activities with potential to affect terrestrial ecology are closely linked with other environmental factors. Traffic and transport movements associated with material deliveries and spoil removal have 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, may interact directly with marine and intertidal habitats, altering seabed structure and temporarily increasing sediment loading, which in turn may influence water and marine ecology.

Air and climate interactions are primarily through dust and emissions from plant and vehicle use, which could settle on nearby habitats or reduce air quality for sensitive species, though control measures will be implemented. Noise and vibration from dredging, blasting, drilling, and heavy machinery operations may overlap with ecological sensitivities, with potential disturbance to birds, fish and marine mammals, although implementation of mitigation will restrict these effects to temporary and localised levels. The interactive effects are likely to be brief to short term and insignificant.

During the operational phase, the projects effects on population, traffic and noise will also have an interactive effects on terrestrial ecology. The interactive effects are likely to be long term and not significant.

15.3.4 Water

During the construction phase there is 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).

Environmental effects from the construction and current state of the Ros an Mhíl Deep Water Quay have been considered in terms of potential interactions across all relevant topics, including population and human health, traffic and transport, biodiversity, water, marine environment, land and soils, air and climate, noise and vibration, landscape and visual and material assets. The assessment indicates that interactions were largely minor and temporary. For example, dredging, blasting, and land reclamation could have an effect on water quality, turbidity, and marine biodiversity, but monitoring and mitigation measures can ensure these effects are brief, local, and reversible. Similarly, construction noise and traffic are only temporary effects on human health, population amenity, and local air quality, which can be mitigated by best-practice measures implemented through the CEMP (See Appendix 2A in EIAR Vol 3). The interactive effects are short term and insignificant.

The potential effects associated with surface water and ground water due to operational phases of the proposed project are addressed individually and in detail, in particular in relation to suitable mitigation measures to minimise effects, within the preceding individual chapters.

A CEMP and SWMP have been completed as part of the EIAR to manage run-off, particularly of sediment laden water, as a means of protecting water quality and aquatic habitats.

15.3.5 Marine

During the construction phase, there are potential interactions between the effects on the marine environments/ species, noise effects and effects on water quality. These effects are 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 have marine noise and water quality effects. Excavation by dredging in the berthing pocket and quay wall trench can result in 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. In accordance with the 'Guidance to Manage the Risk to Marine

Mammals from Man-made Sounds Sources in Irish Waters' (NPWS, 2014), marine mammal mitigation should be applied for all dredging, drilling and blasting operations. The risk is predicted to be **low, temporary** and **localised**.

There is 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 must be maintained. Key measures include 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 is predicted to be **low, temporary,** and **localised**.

15.3.6 Land and Soils

The construction works at Ros an Mhíl Deep Water Quay have the potential to interact 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 mobilise sediments, disturb habitats, generated dust and noise. The filling, excavation, stockpiling and movement of rock material for the project has the potential to effect air quality from increased dust emissions. The delivery and removal of soils, rock and fill to and within the site will have interactions with marine species, as well as traffic and transport. The construction and earth works will also have some visual and landscape effects. A potential adverse effect on surface water can arise from construction works and this could have knock-on effects for marine biodiversity and ecology.

The project will be developed in line with the drainage proposals for surface water management detailed in the CEMP as part of the civil works to ensure adequate protection of water courses during the construction phase.

These interactions of potential adverse effects between biodiversity, water, landscape/visual, noise and vibration, cultural heritage and traffic and transport are **likely** to result in **insignificant** effects during the construction phase only.

15.3.7 Air and Climate

There is 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 is not expected to have significant effects on local air quality due to the site location, short duration and wet climate of the area; however, there is 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. Dust mitigation measures are presented in Chapter 12 Air and Climate to minimise 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 only.

15.3.8 Noise and Vibration

Noise and vibration from construction works have 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 will ensure effects are minimal. Traffic noise increases will be mitigated by

best practices. During construction, vibration levels and impact on land and soils will remain below thresholds capable of causing structural or superficial damage.

If blasting is required, it is most unlikely to require no more than four to ten boreholes in total. Construction noise impact on population and human health, with mitigation measures, will be short term and not significant.

No noise and vibration effect mitigation measures are required for the operational phase of development.

15.3.9 Landscape and Visual

During the construction phase there is 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 earth works, machinery and traffic. However, as the works area form part of the larger port facilities and activities, these activities will not result in significant change in the landscape character or visual effects. The interactive effects are likely to be short term and not significant.

During operation, it is considered that the proposed deep-water quay will represent an extension of an established harbour facility and will consolidate an area of underutilised reclaimed shoreline that currently detracts from the integrity of the harbour. On balance of these reasons, the magnitude of landscape/seascape effect is deemed to be Medium-Low.

15.3.10 Cultural Heritage and Archaeology

The excavation of soils during the construction of the project has the potential to have an effect on archaeology and cultural heritage, as well as land and soils. Given that cultural heritage is a component of landscape character, the indirect effects on cultural heritage also have potential to affect the landscape character. As no effects on heritage resources or underwater heritage are anticipated, these effects are not significant, and the interaction of these effects are likely to result in insignificant and short-term effects.

15.3.11 Material Assets

The development works will make use of existing roads, electricity and water supplies but will not involve any disruption or adverse effect on these services or facilities. The only significant potential for interactive effects is between traffic and material assets. As the traffic effects are short term, localised and insignificant, the effects on the road facilities are considered not significant.

15.4 Summary of Interactions

Table 155-1: 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/O	C	C		C/O
Traffic and Transport	C/O		C/O			C	C/O	C	C		C/O
Terrestrial Ecology		C		C		C	C	C			
Water	C		C		C/O	C					
Marine		C		C/O		C		C			
Land and Soils	C	C	C	C	C		C		C	C	
Air and Climate	C	C	C			C					
Noise and Vibration	C/O	C	C		C	C			C		
Landscape and Visual	C/O	C						C		C	
Cultural Heritage									C		
Material Assets	C	C									

	Interaction
	No Interaction

C	Construction Phase Effect
O	Operation Phase Effect

15.5 Conclusion

A matrix has been generated to summarise the relevant interactions and interdependencies between specific environmental aspects and a significance rating has been given. The matrix presented 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] and operational [O] phases of the project. 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. It has been concluded that there is no significant interactions between any of the various environmental topic areas as a result of the proposed development.