Environmental Impact Assessment Report (EIAR) – Volume 2

Chapter 19 – Interactions Between Impacts on Different Factors

CHAPTER 19

Proposed ORE Capable Terminal on a 250m Wharf Extension & Ancillary Operational Support Infrastructure

Port of Waterford Company

Port of Waterford, Belview, Co. Kilkenny

MALONE O'REGAN ENVIRONMENTAL

19 INTERACTIONS BETWEEN IMPACTS ON DIFFERENT FACTORS

This chapter of the EIAR summarises the interactions between the environmental attributes as discussed in the previous chapters. The interactions are reversible – e.g., as biodiversity interacts with water, so water interacts with biodiversity.

An interaction being possible does not mean an interaction will occur. Table 19-1 is a matrix giving a visual summary of the interactions set out in this EIAR.

Population and Human Health / Water: Potential impacts on human health due to groundwater and/or surface water contamination are unlikely to occur following implementation of mitigation. The water assessment concluded no predicted effects on surface water or groundwater quality from the Proposed Development during the Construction and Operational Phases.

Population and Human Health / Air Quality: Potential effects on human health due to emissions to air will unlikely occur following the implementation of mitigation measures. The air quality assessment concluded that the construction and operation phase effects will be not likely and not significant.

Population and Human Health / Climate: Climate change is an important consideration for human health and a pleasant living environment. The Proposed Development, cumulatively with national GHG emissions, will have a 'not likely' and 'not significant' effect. The Proposed Development will support the deployment and servicing of ORE projects, therefore contributing towards the decarbonisation of Ireland's national energy system. This will result in a slight positive effect on the population's well-being and eco-anxiety.

Population and Human Health / Terrestrial Noise and Vibration: The terrestrial noise assessment has found no likely significant effects of the Proposed Development on noise or vibration during all phases of the Proposed Development; therefore, no effects on human health.

Population and Human Health / Landscape and Visual Impact: The Proposed Development and resulting changes to the surrounding visual amenities have the potential to affect human health through a reduction in quality of life. However, due to the development's nature as an extension of an existing industrial complex and the high degree of screening already provided by the surrounding landscape, it was not considered to have a significant effect on human health through a reduction in quality of life. A Landscape and Visual Assessment was carried out by Macroworks, which determined that the landscape and the visual effects arising from the Proposed Development were deemed not significant.

Population and Human Health / Material Assets - Traffic and Transport: Emissions from traffic may have a negative effect on human health. Traffic may also be considered a disturbance to the population. This was assessed as part of the air quality assessment (Chapter 9) and terrestrial noise assessment (Chapter 11), which concluded that any effects will not be significant.

Population and Human Health / Material Assets - Material Resources, Energy and Waste: Excessive requirements for material resources can limit the ability of the population to meet local needs. Improperly managed waste can affect the local population in terms of both health and enjoyment of the environment. Excess pressure on energy systems can lead to energy shortages, which could affect human health. The construction and operational phase requirements of the Proposed Development for material resources and energy, and the anticipated waste production, have been assessed. It was concluded that the effects of the Proposed Development will be not likely and not significant. Therefore, the effect of material sources, energy provision and waste management on the local population and human health will be not likely and not significant.

Population and Human Health / Material Assets - Water and Wastewater: An excessive demand on water supply could affect the supply available to the local population. Discharges to a UWWTP that cause exceedance of the plant's ELVs can affect the local population in terms of both health and enjoyment of the environment. The effect of the Proposed Development on the water supply and wastewater management and infrastructure were assessed, with the conclusion that the effects will be not likely and not significant. Therefore, there will be no likely or significant effect on local population or on human health arising from the water needs or wastewater produced by the Proposed Development.

Biodiversity / Soils: Potential impacts on the underlying soils and geology could also impact on water quality and therefore ecological aquatic ecology. The capital dredging and land reclamation works have the potential to produce siltation that could impact ecological conditions. However, given that there will be no significant effect on soils and geology or water quality due to the mitigation measures, there will be no significant effect on biodiversity.

Biodiversity / Water: Potential impacts on hydrology can impact ecological conditions and ecologically designated sites. The impacts on biodiversity were addressed in Chapter 6. The ecological status of surface waters will not be significantly affected by the in-water works or the surface water discharge during the operational phase, and there will not be any significant effects on any European Designated sites.

Biodiversity / Air Quality: A decrease in air quality due to dust could negatively impact biodiversity within the vicinity of the Site. However, as outlined in Chapter 9, a Dust Risk Assessment was undertaken and concluded that following the implementation of mitigation measures, the effects of the Construction Phase on air quality will not be significant.

Biodiversity / Climate: The increase in greenhouse gases and change in climate can negatively impact biodiversity, habitats and surroundings. However, the effects of GHG emissions associated with the Proposed Development were determined as not significant.

Biodiversity / Terrestrial Noise and Vibration: Fauna are often sensitive to the disturbances caused by acoustics. However, given the close proximity to existing nearby industrial / port-related developments, it was considered likely that fauna within the local area have been habituated to the acoustic environment. From the noise modelling undertaken in Chapter 11, it was predicted that there will be no significant change to noise levels on any European designated sites or ecological receptors following the implementation of the appropriate mitigation measures.

Biodiversity / Underwater Noise and Vibration: Aquatic fauna are sensitive to the disturbances caused by acoustics. However, following the implementation of appropriate mitigation measures, it was considered that there will be no significant impacts on any European designated sites or ecological receptors during the construction phase. In addition, given the fact that the Site is located within and adjacent to the existing Belview Port, it was considered likely that fauna within the local area have been habituated to the underwater acoustic environment. From the assessment undertaken in Chapter 12, it was predicted that there will be no significant change to noise levels on any European designated sites or ecological receptors following the implementation of appropriate mitigation measures.

Soils and Geology / Water: The removal of the soils will alter the sensitivity of the underlying groundwater / surface water bodies. Additionally, dredging and land reclamation works could release suspended solids and other material into the regional waterbodies and groundwater. Further assessment and the effects on water quality are addressed in Chapter 8, which confirmed no significant effects.

Soils and Geology / Air Quality: The mobilisation of land, soils and geology through demolition and construction processes can affect air quality. The effects on air quality, as assessed in Chapter 9, will be not significant.

Soils and Geology / Climate: Climate Change has the potential to directly impact soils and geology. The frequency of extreme rainfall events, extreme wind and tidal flooding has the potential to increase the risk of coastal erosion. Chapter 10 has concluded that the effects of these climate hazards on the Proposed Development will be 'not significant'.

Soils and Geology / Landscape: The modification of local geomorphology and topology through the extraction of the riverbed and bedrock on land and within the Lower Suir Estuary will potentially impact the visual and landscape character of the area. Coastal erosion may affect scenic natural landscapes in the area. The effects on landscape were determined to have no significant effect.

Soils and Geology / Material Assets – Material Resources, Energy and Waste: Improperly managed waste can cause soil pollution. The effect of waste arising from the Proposed Development was assessed in Chapter 17. Due to the volumes of waste arising and the nature of the mitigation measures in place, the effects of waste from the Proposed Development will be not likely and not significant. Therefore, the effect of waste on soils and geology will be not likely and not significant.

Water / Air Quality: Due to the proximity of the nearby surface waterbody, particulates from the Proposed Development have the potential to enter surface waters and contribute to suspended solids. Construction dewatering and dust suppression activities may involve minor water use but will not materially affect water availability. Interaction with air quality and water was deemed to be imperceptible.

Water / Climate: Climate Change can have a direct impact on water. Under a changing climate, the frequency of extreme rainfall events is expected to increase. The effect of Climate Change on the Proposed Development, with respect to flooding, has been determined to be not significant.

Water / Material Assets – Material Resources, Energy and Waste: Improper waste storage and disposal would have a negative impact on groundwater. However, based on the low risk of this occurring with the proposed mitigation measures in place and the design of the Proposed Development, the impact of waste on water will be 'not significant'.

Water / Material Assets – Water and Wastewater: Water demand and improper wastewater management can affect water levels and water quality. The effect of the Proposed Development on water supply, wastewater management and infrastructure were assessed in chapter 18, with the conclusion that the effects will be not likely and not significant. Therefore, there will be no likely or significant effect on water arising from the water needs or wastewater produced by the Proposed Development.

Air Quality / Climate: GHG emissions can directly impact air quality. However, it has been demonstrated in Chapters 9 and 10 that both of these effects will be 'not likely' and 'not significant'.

Air Quality / Material Assets – Traffic and Transport: Air Quality can be adversely affected by particulates and gaseous emissions from traffic. This was assessed in Chapter 16 (Section 9.5.1.1 and 9.5.2.1), which concluded that the effect will be not significant.

Climate / Material Assets – Traffic and Transport: Climate Change is directly linked to GHG emissions, with road traffic considered one of the highest contributors to national emissions. The assessment on GHG emissions from vehicle movements associated with the Proposed Development has shown effects to be not significant in the context of National and sectoral Emission Ceilings.

Terrestrial Noise and Vibration / Material Assets – Traffic and Transport: Traffic adds to the level of noise on-site. Emissions from traffic were considered in the assessment detailed

in Chapter 11 which concluded that the effects relating to the Proposed Development will not be significant.

Terrestrial Noise and Vibration / Terrestrial Cultural Heritage: Vibration arising from piling work during the construction phase has the potential to effect buildings with cultural heritage value. As per the assessment in this Chapter, no likely significant effects have been predicted arising from vibration during construction works due to the distances from the nearest archaeological features and the type of activities / processes undertaken as part of the Proposed Development during construction and operational phases. The effects of vibration will be not likely and not significant.

Underwater Noise and Vibration / Underwater Cultural Heritage: Vibration arising from piling work during the construction phase has the potential to effect underwater cultural heritage value. As per the assessments undertaken, no likely significant effects have been predicted arising from vibration during construction works on any known underwater archaeological monument, shipwreck or feature due to the distances separating from the Site, the mitigation measures that will be implemented and the type of activities / processes undertaken as part of the Proposed Development during construction and operational phases. The effects of vibration will be not likely and not significant.

Material Assets – Traffic and Transport / Material Assets – Material Resources, Energy and Waste: There will be a temporary increase in traffic on the roads during the Construction Phase. This has been assessed in Chapter 16 as part of the overall traffic assessment, and the effect was deemed to be not significant.

Table 19-1: Interactions Between Impacts Presented in the EIAR

Description	Pop & Health	Bio-diversity	Soils	Water	Air Quality	Climate	Ter. N & V	U'water N & V	Land-scape	Ter. Herit.	U'water Herit.	Traffic	Resources, Energy, Waste	Water & WW
Pop. & Health		X	X	✓	✓	✓	✓	X	✓	X	X	✓	✓	✓
Biodiversity	X		✓	✓	✓	✓	✓	✓	X	X	X	X	X	X
Soils	X	✓		✓	✓	✓	X	X	✓	X	X	X	✓	X
Water	✓	✓	✓		✓	✓	X	X	X	X	X	X	✓	✓
Air Quality	✓	✓	✓	✓		✓	X	X	X	X	X	✓	X	X
Climate	✓	✓	✓	✓	✓		X	X	X	X	X	✓	X	X
Ter. N & V	✓	X	X	X	X	X		X	X	✓	X	✓	X	X
U'water N & V	X	✓	X	X	X	X	X		X	X	✓	X	X	X
Landscape	✓	X	✓	X	X	X	X	X		X	X	X	X	X
Ter. Heritage	X	X	X	X	X	X	X	X	X		✓	X	X	X
U'water Herit.	X	X	X	X	X	X	X	X	X	✓		X	X	X
Traffic	✓	X	X	X	✓	✓	✓	X	X	X	X		✓	X
Resources, Energy, Waste	✓	X	✓	✓	X	X	X	X	X	X	X	✓		X
Water and WW	✓	X	X	✓	X	X	X	X	X	X	X	X	X	