

13.0 INTERACTIONS AND INTER-RELATIONSHIPS

13.1 Introduction

This chapter of the remedial Environmental Impact Assessment Report (rEIAR) has been prepared by Golder, a member of WSP Ireland Consulting Ltd to support a Substitute Consent application to An Bord Pleanála (ABP) on behalf of ECT Sand and Gravel. The Substitute Consent application has been made for the quarrying activities (the Development) located at the townlands of Ballinabarny North and Bolagh Lower, Redcross, Co. Wicklow..

This chapter of the rEIAR describes interactions/inter-relationships between environmental effects in the area surrounding the Development.

The assessment directly covers the physical extent of the rEIAR study boundary as shown in Figure 13.1, and the assessment area has been extended as appropriate to identify the relevant interacting effects surrounding the Development.



Figure 13.1: rEIAR Study Boundary (in red)

Environmental factors are inter-related to some degree, and these interactions can exist on many levels. This chapter summarises the primary interactions between the environmental topics and provides a matrix to coherently display them.

The overall objective of the assessment in this chapter is to identify whether remedial measures are required that would not otherwise have been identified in the individual study areas for these interacting effects.

The overall rEIAR Project Team contributed to the compilation of this chapter.

13.1.1 Development Description

The lands the subject of this rEIAR extend to ca. 23.7 ha and reflect the historic operational site area including the extractable area declared under S.261 quarry registration in 2005. The quarry extraction area that makes up the application for the substitute consent planning unit currently extends to ca. 20.16 ha. lying central to the Project Site. At baseline in 1990 the quarried area has been determined to extend to ca. 0.75 ha. and in 2022 to have expanded laterally to ca. 20.16 ha. The average working depth in 1990 was ca. 124 mAOD. The depth of extraction currently takes place to ca. 125 m OD, at the central area of the Site and the worked-out areas generally extend to c.114mOD dipping to c.111mOD in the Northwest where the quarry pond has developed. The reserve consists of sands and gravels and extracted by mechanical means. The excavated material is transported by mobile plant and transported to the central processing area for screening, washing and grading. The quarry is accessed via a gravel covered laneway from the L5155 road linking to the L1152. The laneway currently leads to the administration buildings via the aggregate processing plant area (plant site).

13.2 Methodology

This assessment has been made with reference to the 'Guidelines on the information to be contained in Environmental Impact Assessment Reports', published by the EPA (2022). These guidelines were drafted by the EPA with a view to facilitating compliance with the EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU, together the 'EIA Directive').

The descriptive terminology used follows a 'matrix approach' to environmental assessment which is based on the characteristics of the impact (magnitude and nature) and the value (sensitivity) of the receptor. The terminology and method have been summarised in Chapter 1, (Introduction, Scope and Methodology) Section 1.7 of this rEIAR.

For the assessment of interacting effects, a matrix has been provided in Table 1, (Introduction, Scope and Methodology) identifying through professional judgment the specific topics within the rEIAR where the effects potentially interact/inter-relate with each other.

Table 13.1: Environmental Interactions

	Pop. & Human Health	Ecology & Biodiversity	Land, Soils & Geology	Water	Air Quality & Climate	Noise & Vibration	Cultural Heritage	Traffic & Transport	Landscape & Visual	Material Assets
Pop. & Human Health										
Ecology & Biodiversity										
Land, Soils & Geology										
Water										
Air Quality & Climate										
Noise & Vibration										
Cultural Heritage										
Traffic & Transport										
Landscape & Visual										
Material Assets										

Note: Green shaded boxes indicate that there is potential for interaction. Due to the nature of the development, only interactions during the operational phase is considered.

13.2.1 Population and Human Health

During the assessment period of 1990 to present, quarry activity effects on population and human health could have interacted with water, air quality, noise, traffic and transport, landscape and visual, and material assets.

Potential effects to the human environment from Site activities may have potentially included impacts on water which may have affected groundwater quality and quantity in local wells. Potential impacts to human health may have arisen from dust generating activities on the Site and increases in concentrations of airborne particles due to quarry emissions. Impacts to human health from excess noise on site may have potentially resulted in direct effects to site workers and also annoyance and effects on mental health in the surrounding residential receptors.

Visual impact during the assessment period may have potentially related to the effect of the Development on specific views and on the general visual amenity experienced by people.

Site activities during the assessment period may have had the potential to impact or cause disruption to local services or utilities.

These interactions have been considered in the relevant chapters of this rEIAR: Chapter 3 Population and Human Health, Chapter 6 – Water, Chapter 7 – Air Quality and Climate, Chapter 8 – Noise and Vibration, Chapter 10 – Landscape and Visual, Chapter 11 – Traffic and Transport, and Chapter 12 – Material Assets.

In summary, these assessments have identified that such interacting effects with the human environment are **not significant**.

13.2.2 Ecology and Biodiversity

During the assessment period there was potential for interacting effects between ecology and biodiversity and land, soils and geology, water, air quality, noise and vibration and landscape and visual.

Adverse impacts to the soil, water and air environment would have had the potential to deteriorate habitat quality both on and off-site.

Similar to human receptors, impacts from excess noise and vibration on Site may have potentially resulted in stress to some species and effects on biodiversity and habitats surrounding the Site.

Elements of the Development have altered landscape features permanently. A large proportion of habitat altered by the Development was identified in the 1990s aerial to be grassland with trees and treelines, scrub, and hedgerows. With the extension of the Development, degradation of tree and hedgerow habitat and habitat severance had the potential to cause stress to species associated with tree and hedgerow habitat.

These interactions have been considered in the relevant chapters of this rEIAR: Chapter 4 – Ecology and Biodiversity, Chapter 5 Land, Soils and Geology, Chapter 6 – Water, Chapter 7 – Air Quality and Climate, Chapter 8 – Noise and Vibration and Chapter 10 – Landscape and Visual.

In summary, these assessments have identified that such interacting effects with the surrounding ecology and biodiversity are **not significant**.

13.2.3 Land, Soils and Geology

During the assessment period there was potential for interacting effects between soil and geology, water, and cultural heritage.

Excavated materials have arisen as a result of the stripping of soils and the removal of rock during the progression of the Development. These activities had the potential to cause changes in the underlying water environment and also to damage undiscovered cultural heritage features.

These interactions have been considered in the rEIAR in Chapter 5 – Land, Soils and Geology, Chapter 6 – Water, and Chapter 9 – Cultural Heritage.

In summary, these assessments have identified that the interacting effects with land, soils and geology and water and cultural heritage are **not significant**.

13.2.4 Water

During the assessment period there was potential for interacting effects between water, and population and human health, ecology and biodiversity and land, soils and geology.

Chapter 3 – Population and Human Health considers the potential for impacts to water supply and human health based on the water assessment. connectivity of the Site with ecological receptors.

Chapter 7 – Land, Soils and Geology assesses the interactions between silt and other land/soil management across the Site and the water environment. Chapter 5 – Ecology and Biodiversity considers the potential for impacts, taking into account the hydraulic Air Quality and Climate

In summary, these assessments have identified that the interacting effects are **not significant**.

13.2.5 Noise and Vibration

During the assessment period it is considered that there has been potential for interacting effects between noise and vibration and population and human health and ecology and biodiversity.

Chapter 5 – Ecology and Biodiversity and Chapter 3 -Population and Human Health set out the potential impacts on ecological and human receptors arising from noise on Site and identifies mitigation measures to reduce the potential for these.

The assessments show that the interaction of effects are **not significant**.

13.2.6 Cultural Heritage

During the assessment period there was potential for interacting effects between cultural heritage and air quality, noise, and landscape and visual impacts.

Extraction and processing activities that generated dust could have holistically affected the setting of cultural heritage assets within the wider study area. Also, alterations in the landscape and visual amenity of the Site had the potential to impact the value of recorded monuments and also unrecorded features.

These interactions have been considered in Chapter 5 – Land, Soils and Geology, Chapter 7 – Air Quality and Climate, Chapter 8 – Noise and Vibration, and Chapter 9 – Cultural Heritage.

In summary, this assessment in the rEIAR has identified the above interacting effects as **not significant**.

13.2.7 Traffic and Transport

It is considered that there would have been potential for an interaction of effects during the assessment period between traffic and transport and population and human health. Chapter 3 – Population and Human Health considers the impact of traffic associated with the Site activities on the amenity of the local area. The interactions of effects are considered to be **not significant** particularly given the distance of the Site from community amenity lands.

13.2.8 Landscape and Visual

During the assessment period of 1990 to present, it is considered that there has been potential interaction between landscape and visual effects and population and human health, ecology and biodiversity and cultural heritage effects. Chapter 3, Population and Human Health considers the potential of the Site in terms of its visual amenity for the enjoyment of the local population. Chapter 4 – Ecology and Biodiversity considers the potential of landscape features in terms of providing ecological habitat. Chapter 9 – Cultural Heritage identifies features of architectural or cultural merit that have been considered in the assessment of landscape and visual effects.

It is considered that the interacting effects are **not significant**.

13.2.9 Material Assets

During the assessment period of 1990 to present, quarry activity effects on built infrastructure such as electricity and water infrastructure had potential for interacting effects with amenity for local residents. Inadequate infrastructure/ inappropriate use of services at the Site could, for example, have resulted in disruption of supply to other users of services in the wider area

These interactions have been considered in Chapter 3 – Population and Human Health, Chapter 6 – Water and Chapter 12 – Material Assets.

The respective chapters have identified that appropriate services have been provided to the Site to cater for its requirements and the interacting effects between material assets and the local population are **not significant**.

Cumulative and Combined Effects

This section of the rEIAR identified the potential for environmental effects and impacts of the Development in combination with other relevant committed development surrounding the Site.

Cumulative effects are defined as the addition of many non-significant or significant effects, including the effects of other projects, to create larger, more significant effects. Singular activities may have a non-significant effect in isolation, however when combined with other effects these can be collectively significant and therefore must be included in the EIA process.

Relevant developments in the region of the Application Site were examined to assess the likelihood and magnitude of combined environmental effects with the Development. A C&D waste recycling facility is located approximately 400m to the southeast of the application Site. The waste facility operates under permit conditions including environmental emissions thresholds of which there has been no exceedances to date. With the adoption of standard best practice construction management, no significant cumulative effects were noted further to those that had been identified in preceding chapters of the rEIAR

13.3 Conclusions

It has been concluded that there were no significant interactions between any of the various environmental topic areas as a result of previous operations within the Development lands, and surrounding study area.