

17 INTERACTIONS

17.1 Introduction

This chapter identifies the inter-relationships of impacts as identified throughout the Environmental Impact Assessment Report (EIAR). An impact measure from one environmental topic may indirectly cause a secondary impact on another topic. While direct and indirect impacts have been assessed within the relevant chapters of this EIAR, the overall purpose of this chapter is to highlight the main areas of interrelated impacts identified for the proposed development.

17.2 Methodology

17.2.1 Legislation

In terms of legislation, the catalyst to consider interactions derives from Article 3(1)(e) of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU which requires inter alia that the EIAR shall identify, describe and assess in an appropriate manner, the direct and indirect significant effects of a project including the interaction of environmental factors.

17.2.2 Guidance

This Chapter has been prepared with reference to the following guidance documents:

- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions European Commission, (European Commission 1999); and
- Guidelines on the information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).

17.2.3 Methodology

The assessment of interactive effects has considered likely significant effects arising from impact interactions that may occur during the construction, operational and restoration phases of the proposed development. The approach has aligned with the above guidance and **Chapter 1: Introduction**.

The approach taken has been to:

- Identify the potential for interactions between different environmental topics over the life cycle of the project in matrix format. The determination of interactions was facilitated through an iterative design process that included consultation between designers, environmental specialists and technical specialists. It also considers the potential for mitigation measures prescribed in respect of one particular environmental factor to give rise to unintended negative impacts in respect of one or more other factor, as appropriate; and
- Prepare a summary of the interactions between different environmental topics which have been identified and addressed in this EIAR.

17.3 Inter-relationship of Impacts

In this regard, a matrix has been provided in **Table 17-1** of this chapter. **Table 17-1** identifies the interactions as identified in the EIAR and illustrates those impacts resulting from one aspect of the environment can have a direct effect on other elements of the environment.

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Table 17-1 Interaction of Impacts

	Population	Human Health	Biodiversity	Soil, Geology and Hydrogeology	Water	Air Quality and Climate	Noise and Vibration	Traffic and Transportation	Material Assets	Cultural Heritage	Landscape and Visual Assessment
Population	X							X	X	X	X
Human Health				X	X	X	X	X			
Biodiversity				X	X	X					X
Soil, Geology and Hydrogeology					X						
Water											
Air Quality and Climate								X			
Noise and Vibration								X			
Traffic and Transportation									X		
Material Assets											
Cultural Heritage											
Landscape and Visual Assessment											

17.3.1 Interaction between Population, Human Health, Traffic and Transportation, Material Assets, Cultural Heritage and Landscape and Visual Assessment

The population environmental topic relates to the human population and subsequently and the community. The operational phase of the proposed development has potential for a negative cumulative impact on the immediate local environment, business and residents. The topics listed have the potential to impact the population and community.

The local community and their wellbeing may be negatively impacted by the ongoing vehicular traffic associated with the development's operation. The traffic has the potential to negatively impact material assets and cultural heritage sites by generating dirt and dust and impacting transport infrastructure from HGVs. It is proposed to maintain the maximum input; therefore, additional disturbance is not expected to the local communities.

The completion of the proposed development is an infilled and restored land that is currently a negative landscape, human health, traffic and material asset impact. The restoration of the void will result in positive impacts to human health through infilling a human and livestock hazard and reducing the volume of traffic in the area. The development will improve material assets and landscape, improving social, amenity and tourism assets.

17.3.2 Interaction between Human Health, Soil, Geology and Hydrogeology and Water

Human health can be impacted by soil, geology and hydrogeology and water if mitigation measures are not in place. Water and soil, geology and hydrogeology have direct interactions as water is transferred to groundwater through the soil and underlying geology. The reinstating of the site shall have a positive impact to surface water drainage by reducing the vulnerability of the underlying aquifer and reducing run-off to a greenfield rate.

Human health interacts with water and hydrogeology as these receptors have the potential to become contaminated and subsequently impact drinking water supply that would result in negative impacts on human health without mitigation.

17.3.3 Interaction between Human Health, Air Quality and Climate, Noise and Vibration and Traffic and Transportation

Large scale developments have the potential to have an interaction between traffic and noise and vibration, as well as traffic and air quality and climate. This is the case for developments which give rise to HGV traffic which emit higher noise and emissions than standard vehicular traffic. This development is reliant on HGV movements to and from the site which have such noise and air quality potential implications.

The transport of materials (wastes in and aggregates out) in particular in this case can impart dust and CO₂ emissions which impact air quality and climate. The proposed HGV movement and interacting impacts may have negative implications on human health.

The proposed development however will manage and limit the traffic through the chosen infill rate of 500,000 tpa which will limit the traffic and associated implications during the proposed 25-year timeframe whilst providing long term benefits to the listed topics through restoring the site.

17.3.4 Interaction between Biodiversity, Soil, Geology and Hydrogeology, Water and Air Quality and Climate

Negative environmental impacts to soil, geology and hydrogeology, air quality and climate and water have the potential to result in adverse effects to the areas biodiversity. The varying quality of land, water and air quality may impact on the biodiversity present in the area.

Monitoring and mitigation measures are in place to minimum adverse land, water and air quality impacts and will subsequently support existing and future biodiversity.

17.3.5 Interaction between Biodiversity and Landscape and Visual Assessment

Changes to the landscape and subsequent changes to habitats have the potential to impact biodiversity. The proposed development has the potential to disturb existing biodiversity that have nested in the current void with potential for medium term negative impacts.

The proposed restoration and reinstating of the existing void for agricultural use and to blend the site with the natural environment will provide suitable habitats and a long-term improved biodiversity through improving the existing landscape.

17.4 References

1. Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions European Commission, (European Commission 1999).
2. Guidelines on the information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).