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TABLES

Table 15-1 Interactions
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## INTRODUCTION

- 15.1 All of the reasonably predictable significant impacts of the proposed development and the measures in place to mitigate them have been outlined in the EIAR. However, for any development with the potential for significant environmental impacts there is also the potential for interaction amongst these impacts. The result of these interactions may either exacerbate the magnitude of the impact or ameliorate it. The interaction of impacts on the surrounding environment is required to be addressed as part of the Environmental Impact Assessment process.
- 15.2 Specifically, Article 3 of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending ('EIA Directive') 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).'*
- 15.3 This Environmental Impact Assessment Report in respect of the proposed materials recovery recycling facility and inert landfill at Ballinclare Quarry was prepared by SLR Consulting (on behalf of Kilsaran) as an integrated document, rather than a collection of separate reports.

## Interaction of Environmental Factors

- 15.4 The interaction between the various environmental topics has been covered within each of the EIAR Chapters, 4 through to 14, where relevant. For example, there are clear overlaps between the land, soils and geology assessment and the hydrological conditions at the site. The purpose of this chapter is to draw attention to significant interactions and interdependencies between one topic and another where they may otherwise be missed
- 15.5 The environmental components which might potentially be impacted by a development of this kind and at this location have been identified through the site assessment as follows:
- Effects on land use and amenity;
  - Impacts on local sensitive receptors;
  - Impacts on natural heritage and wildlife habitats and disturbance to flora and fauna;
  - Impacts on groundwater, surface water bodies, soils and bedrock geology;
  - Nuisance potential and or public health effects due to noise or dust emissions;
  - Impacts on local archaeology;
  - Changes in visual character;
  - Impacts on material assets such as infrastructure or local utilities.
- 15.6 A matrix method has been used, in which the environmental components addressed in the previous Chapters of this EIAR have been placed on both axes of a matrix. Where interactions arise between two environmental components, the intersection square along a row or column of the matrix in **Table 15-1** is shaded green.
- 15.7 The purpose of the effects matrix is to readily identify potential interactions. Actual interactions and their significance are dealt with in the relevant topic Chapter of the EIAR with a brief overview of some more pertinent interactions provided in this Chapter below.

Table 15-2  
Interactions

	Population / Human Health	Biodiversity	Land, Soils and Geology	Water	Air	Climate	Noise	Material Assets	Cultural Heritage	Landscape and Visual	Traffic
Population / Human Health											
Biodiversity											
Land, Soils and Geology											
Water											
Air											
Climate											
Noise											
Material Assets											
Cultural Heritage											
Landscape and Visual											
Traffic											

## POTENTIAL INTERACTIONS

### Population and Human Health

- 15.8 According to the 2022 EPA EIA Guidelines, human health should be considered in the context of the relevant environmental topics addressed by the EIAR. Specifically, effects on human health should be considered in relation to relevant pathways (such as air, soil and water) and should be considered in the context of accepted standards or limits for exposure, dose or risk.
- 15.9 This EIAR indicates that the proposed establishment and operation of a materials recovery recycling facility and inert landfill at Ballinclare Quarry and the long—term restoration of the application site can proceed within acceptable standards for human exposure to noise and dust, while potential effects on land / soil and water could be

adequately addressed through good environmental management practices and mitigation measures to avoid excessive emission, accidental spillages of fuel, etc.

- 15.10 The key matters in relation to amenity are noise, dust, vibration, landscape, infrastructure and traffic. As previously noted, this EIAR has concluded that the establishment and operation of the proposed development can be managed to ensure minimal disturbance to surrounding receptors.
- 15.11 Potential interactions with human health are discussed in Chapter 4 (Population and Human Health), Chapter 6 (Land, Soil and Geology), Chapter 7 (Hydrology and Hydrogeology), Chapter 8 (Air Quality), Chapter 9 (Climate), Chapter 10 (Noise), Chapter 11 (Material Assets), Chapter 12 (Cultural Heritage), Chapter 13 (Landscape) and Chapter 14 (Traffic).

## Biodiversity

- 15.12 The development of the proposed materials recovery recycling facility and inert landfill will potentially impact local habitats and species by way of changes to existing ground surfaces / landforms, most notably around the proposed passive wetland treatment system, as well as the generation of noise and dust.
- 15.13 Over the long-term the final restoration is likely to have a positive and beneficial effect on wildlife and on local biodiversity with the restoration of the former quarry area to a native woodland habitat.
- 15.14 There has been considerable interaction between the biodiversity specialists and the landscape design team in terms of ensuring that the proposals incorporate numerous measures for biodiversity protection and enhancement such as retention of quarry faces for nesting peregrine falcon and creation of habitats for other birds and bats.
- 15.15 The land and soil, water, noise and air assessments have been undertaken with reference to accepted guidance on the acceptability of impacts in relation to human and ecological receptors, and all available mitigation measures are incorporated to the design and operation of the proposed development to further minimise the potential impacts to these receptors.
- 15.16 Potential interactions associated with the materials recovery / recycling and landfilling activities are discussed in Chapter 5 (Biodiversity), Chapter 6 (Land, Soil and Geology), Chapter 7 (Hydrology and Hydrogeology), Chapter 8 (Air Quality), Chapter 10 (Noise) and Chapter 13 (Landscape).

## Land, Soils and Geology

- 15.17 The management of soils and natural particulate materials during the landfilling and waste recovery activities has potential implications for biodiversity (loss or degradation of habitat), water quality (contamination, sediment transport, accidental spills), air quality (through dust emissions) and long-term noise and visual amenity (though use of soils for screening bunds, final restoration / land-use).
- 15.18 The potential impact of the proposed activities on land, soil and geology and the potential interactions with other environmental topics are discussed in Chapter 6 (Land Soil and Geology), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 7 (Hydrology and Hydrogeology), Chapter 8 (Air Quality), Chapter 10 (Noise), Chapter 11 (Material Assets), Chapter 12 (Cultural Heritage) and Chapter 13 (Landscape).

## Water

- 15.19 The proposed materials recovery / recycling and landfilling operations have potential to impact water quality and this also has implications for human health, soil and geology (land quality), biodiversity (habitats and species) and material assets (aquifers / wells).

- 15.20 The potential impact of the proposed activities on the water environment and the potential interactions with other receiving environments are discussed in Chapter 7 (Hydrology and Hydrogeology), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 6 (Land Soil and Geology), Chapter 9 (Climate) and Chapter 11 (Material Assets).

## Air Quality

- 15.21 The main air quality impacts are associated with the potential for dust emissions due to the handling and placement of imported soil and stone and processing of C&D materials at the proposed development. The potential for dust arisings has been assessed in relation to established guidelines on the acceptability of dust levels. Numerous mitigation measures are proposed to ensure that any potential for impacts on local residents and ecological receptors are minimised further. The potential for air quality impacts from traffic emissions is also assessed in relation to established guidelines.
- 15.22 The impact of the proposed landfilling and waste recovery activities on the atmosphere and the potential interactions with other receiving environments are discussed in Chapter 8 (Air Quality), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 6 (Land, Soils and Geology), Chapter 9 (Climate) and Chapter 14 (Traffic).

## Climate

- 15.23 The resilience of the application site and proposed development is considered in Chapter 9 in relation to its suitability (for example in relation to water attenuation / flooding susceptibility) and potential for adaptation.
- 15.24 The predicted greenhouse gas emissions comprise a small proportion of Ireland's current annual CO<sub>2</sub>e emissions. The proposed development does however make a major contribution to developing the circular economy in Ireland, particularly in the construction and development sector and its future operations, if approved, will help to maximise the use of existing resources and enhance efficiency and sustainability in our use of limited land resources.
- 15.25 In line with the obligations of wider society and in accordance with Government policy and economic drivers (interaction with Population and Human Health), the Applicant will continue to embrace new technologies and opportunities to reduce carbon emissions from its operations (as in this instance through deployment of solar panels and opportunities for backloading of HGVs travelling to and from the application site).
- 15.26 The potential interactions between Climate and the proposed development are considered in Chapter 9 (Climate), Chapter 4 (Population and Human Health), Chapter 7 (Hydrology and Hydrogeology), Chapter 8 (Air) and Chapter 14 (Traffic).

## Noise and Vibration

- 15.27 The noise assessment described in Chapter 10 was undertaken with close consideration of the local resident settlement pattern. The prediction of potential impacts has been modelled on the likely impacts at each of the closest, representative residences. The assumptions on noise generated is also closely aligned to the assumptions regarding traffic to be generated as a result of the proposed development. Regard was also had to best practice guidance in respect of acceptable noise limits at ecologically sensitive areas.
- 15.28 The interaction between noise / vibration and other receiving environments is discussed in Chapter 10 (Noise), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity) and Chapter 14 (Traffic).

## Material Assets

- 15.29 The impact of the proposed materials recovery / recycling facility and inert landfill on material assets and its key interactions, on the groundwater aquifer and the local road network, are addressed where relevant in Chapter 11 (Material Assets), Chapter 4 (Population and Human Health), Chapter 6 (Land, Soils and Geology), Chapter 7 (Water), Chapter 12 (Cultural Heritage) and Chapter 14 (Traffic).

## Cultural Heritage

- 15.30 The impact of the proposed materials recovery / management facility on cultural heritage and the potential interaction with other receiving environments are discussed where relevant in Chapter 12 (Cultural Heritage), Chapter 4 (Population and Human Health), Chapter 6 (Land, Soil and Geology), Chapter 11 (Material Assets) and Chapter 13 (Landscape).

## Landscape and Visual

- 15.31 The proposed activities at Ballinclare Quarry will impact the existing landscape and visual amenity over its operational life and following its long-term restoration to its pre-existing landform, with potential implications for human beings, habitats, land quality and archaeology.
- 15.32 The impact of the planned development on the landscape and the potential interaction with other receiving environments are discussed where relevant in Chapter 13 (Landscape), Chapter 4 (Population and Human Health), Chapter 5 (Biodiversity), Chapter 6 (Land, Soil and Geology) and Chapter 12 (Cultural Heritage).

## Traffic

- 15.33 Assumptions in relation to traffic generation are fundamental to the assessment of noise and air quality impacts given that the emissions from HGVs are identified as one of the core activities with potential for such impacts. The potential for traffic congestion or disturbance to amenity is also a key consideration in terms of impacts to population and human health. Internal management of plant and machinery is important in terms of avoiding soil compaction.
- 15.34 Potential interactions associated with traffic movements from the proposed landfilling and C&D waste recovery activities are discussed in Chapter 14 (Traffic and Transportation), Chapter 4 (Population and Human Health), Chapter 6 (Land, Soils and Geology), Chapter 8 (Air Quality), Chapter 9 (Climate), Chapter 10 (Noise) and Chapter 11 (Material Assets).

## Mitigation and Residual Impacts

- 15.35 Where any potential interactive negative impacts have been identified in the above, a full suite of appropriate mitigation measures has already been included in the relevant sections (Chapters 5-14) of the EIAR. These mitigation measures are presented in a consolidated version in Chapter 16.