

Chapter 14.0

Interaction of the Foregoing

14.0 Introduction

All environmental factors are interlinked to a degree such that interrelationships exist on numerous levels. The EIA process includes assessment by the Competent Authority. The preparation of this EIAR has ensured that interactions between the various disciplines and potential impacts have been taken into consideration. This chapter which has been prepared by Orla O'Callaghan, BA, MPlan, Senior Planner at Cunnane Stratton Reynolds, considers the interactions of impacts between separate disciplines of the EIAR. Table 14.1 provides a matrix summarising the potential interactions.

This approach is considered to meet with the requirements of Part X of the Planning and Development Act 2000 and Part 10, and schedules 5, 6 and 7 of the Planning and Development Regulations 2001 as amended as well as the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

14.1 Potential Interactions of the Proposed Development

The primary interactions may be summarised as follows:

- Interactions between Population and Human Health and Air Quality and Climate; Noise and Vibration; Water and Hydrology; Traffic and Transport; Landscape and Visual Impact and Material Assets
- Interactions between Land and Soils and Traffic and Transport; Water and Hydrology; Material Assets (Waste Management); Noise and Vibration; Air Quality and Climate; Biodiversity; Population and Human Health and Landscape and Visual Impact
- Interactions between Air Quality and Climate and Traffic and Transport
- Interactions between Noise and Vibration and Traffic and Transport
- Interactions between Biodiversity and Water and Hydrology and Visual Impact and Landscape

14.1.1 Population and Human Health

Population and Human Health and Air Quality and Climate

The interaction between population and air quality and climate has been discussed in Chapter 7 of the EIAR. The generation of traffic during the construction and operation stages of the development leads to increased vehicle emissions and thereby interacts with air quality and climate. With regard to construction dust, once dust emissions are managed through the implementation of a satisfactory dust management plan (see Appendix 7.1 of the EIAR) then the effect on PM10 and PM2.5 concentrations (i.e. fine particulates) will be slight. Furthermore, the effects of increased pollution and CO2 emissions interact with population and human health. The results of this assessment show that these impacts will be negligible.

Population and Human Health and Noise and Vibration

There will be interaction between Population and Human Health and Noise and Vibration as discussed in Chapter 8 of the EIAR. It should be highlighted that any potential construction noise emission exceedances that may occur will be relatively both temporary and short term in nature. Chapter 8 sets out mitigation measures to be adopted during the construction phase and it is concluded that the application of the practicable noise control mitigation measures and controlled hours of working will ensure that the impact of construction noise and vibration associated with the development is mostly within the criteria limits established in this report and minimised as far as practicable.

In considering the noise impacts from the operational stage of the proposed development, the provision of the delivery truck, pumping station and building services mitigation measures detailed in Chapter 8 will ensure that the proposed development's cumulative residual noise levels are achieved. These levels are within the criteria limits established in this report and would therefore be considered insignificant. Impacts from all other noise sources associated with the development have been confirmed as being insignificant.

Population and Human Health and Water and Hydrology

The contamination of water courses or the ground water has the potential to interact with population and Human health. The Water and Hydrology Chapter (Chapter 6) of the EIAR has outlined a series of mitigation measures to avoid any contamination of watercourses and groundwater during the construction phase of the proposed development.

The proposed surface water drainage design is in accordance with the requirements of Cork City Council and Sustainable Urban Drainage System (SuDS) methodologies have been implemented as part of mitigation measures proposed. There are no predicted residual impacts on the water and hydrological environment during the operational phase that would interact with population and human health.

Population and Human Health and Material Assets (Traffic and Transport)

The interaction between population and traffic has been discussed in Chapter 9B. The construction access to the site will be from the R614 Ballyhooly Road via the proposed main Distributor Road serving the site. The successful Contractor will develop a Construction Stage Temporary Traffic Management Plan including the identified haulage routes in compliance with the Preliminary Temporary Traffic Management Plan developed in consultation with Cork City Council Roads & Transportation Department.

The surrounding road network is suitable to accommodate the construction traffic associated with the proposed development and the Construction Traffic Management Plan will include a range of mitigating measures as identified in the CEMP to ensure the safety of the workforce on the site and accessing the site, and the public on the surrounding roads and to minimise construction traffic generation and disruption on the surrounding road network.

It is evident that the current bus provision in the area allows travel to a wide area within 30 minutes, with many of the main employment centres being within the 20 minute range. Within a 10 minute walk time from the site entrance on Ballyhooly Road there is a local church, primary and secondary schools, Murphy's Rock Pub, Kempton Park, bus stops (207) and the local soccer club, Leeds Utd. Within a 15 minute walk time there is a Lidl Store, the Fox & Hounds Bar & Restaurant, a betting shop, off-licence, hairdresser, further bus stops (the 207a) and the Dunnes Stores District Centre. The 20-30 mins walking range includes 'The Glen' Hurling & Football Club, The Blackpool Retail Park including cinema, Mayfield Community School and Mayfield Sports Complex.

It is noted in Chapter 9B that in-line with the 2016 Census Data the existing modal shift rate of 12% has been assumed to remain stagnant up to the end of 2021. Thereafter, with the completion of the Ballyhooly Strategic Transport Corridor Scheme, this modal shift rate is expected to increase with the aim of achieving a rate of 45% by the end of 2025.

Significant effort has been put in to delivering connectivity from the site to local services and public transport options in accordance with national and local planning policies to reduce reliance on the car for travel. It has been clearly demonstrated that the proposed scheme

falls within the category of development where the use of sustainable transport solutions will be a real option. This premise is further supported by the Local Authority and the National Transport Authority's commitment to the delivery of the Ballyvolane Strategic Transport Corridors Project. This scheme has received funding with works to be completed on the ground in 2023.

The traffic modelling concludes that these proposed upgrade works are sufficient to ensure that the critical junctions remain operational for future years up to and including the completion date of the final phase in 2029. Thereafter additional infrastructure as outlined in CMATS will be in the process of being delivered.

Population and Human Health and Material Assets (Services, Utilities and Waste)

There is potential interaction with material assets due to interruptions to services/ utilities when connecting to the proposed development. Should waste be incorrectly handled or stored at the development site, it has the potential to cause an adverse impact upon human beings through nuisance, including visual, odour and pests, and pollution. Waste during the operational stage of the proposed development is discussed in Material Assets Chapter 9A. During the construction phase, wastes would be segregated and stored in suitably contained waste receptacles at the site compound. Waste would be removed from the development on a regular basis, to avoid the accumulation of high waste volumes, which could cause nuisance. The management of waste during the construction stage is discussed in Chapter 5 Land and Soils, Chapter 9A Material Assets and the Construction Environmental Management Plan prepared by MHL and Associates.

Population and Landscape and Visual Impact

Changes to the landscape character of the site will include the development of new buildings, roads and associated landscaping.

On balance, there will be a predicted High and Neutral Significance of impact on Landscape Character. This conclusion acknowledges the significant change to landscape character which will arise from the development whilst also taking account of the emphasis placed in the design proposals on the delivery of quality residential environments and sustainable long-term landscape infrastructure across the site that will provide for integration of the development in the sensitive hillside setting.

In terms of the visual impact and how it interacts with population, construction works associated with the proposed development will be visible during the construction of the proposed development particularly in areas adjacent to the site boundaries. These impacts will be mitigated by the provision of construction hoarding which will provide screening and the storage of stockpiles will be away from residential boundaries.

Once operational at the macro (wider) landscape level, views of the proposed development site are generally from vantage points on high ground associated with the southern ridge of the Glen River valley, and high ground along the local road network to the north-west of the site. In these views distance has a diminishing effect such that visual impacts are found to be neutral (Reference views 8, 10B, 10C, 11 15A and 16). In view 6, short term visual impacts associated with phases 2, 3 and 4 are found to be adverse but reducing to neutral in the medium to long term as remedial mitigation measures in the form of tree planting take effect.

In distant views 9A, 10A and 12, there will be no visual impacts experienced as the subject site will be fully screened from view by the rising landform to the north of the Glen River Valley.

At the micro (local) landscape level, topography and tree cover play a substantial role in limiting views of the site but there will be some significant views of the proposed development arising in respect of views 1, 2 and 5. While short term visual impacts in respect of these viewpoints are found to be adverse, reflecting a level of perceived intrusion in the landscape where the rear elevations of houses are visible, these impacts will be mitigated in the medium to long term as the mitigation measures in the form of tree, hedgerow and woodland screen planting take effect. The resulting medium to long term impacts will, therefore, be categorised as neutral. In the case of view 3, short term and medium to long term impacts are found to be beneficial reflecting the manner in which phase 2 development addresses the local road and the quality of finishes in house elevations combined with hard and soft landscape finishes and open space provision.

Along Ballyhooly Road views 7A & 7C will give rise to neutral impacts in the short term as well as the medium to long term. View 7B shows the apartment blocks which will be delivered as part of phase 6 development. While the apartments will constitute a significant intervention in the local landscape, they will provide definition, enclosure and overlooking along Ballyhooly Road and will function as a landmark to define the main entrance to the residential development. Tree and understorey planting along site boundary embankments to the front of the apartments will soften the elevations as it matures.

Short-term adverse impacts are identified in respect of eight of the twenty viewpoints assessed. These impacts will be mitigated, however, in the medium to long term, as mitigation measures in the form of tree, woodland and hedgerow planting take effect on the site. There is just one viewpoint (View 6) where medium to long term adverse impact applies. This relates to the profile of phase 2 development on high ground in the view. The relatively small number of adverse impacts reveals the capacity of the site to accommodate the proposed development while the absence of long-term adverse impacts (with the exception of view 6) provide a good overview of the nature of the emerging green network throughout the subject site. It should be noted that the aim of such mitigation is not to fully screen or hide the development but to provide a sustainable long-term natural framework which will suitably anchor the development in the local landscape setting. There are no scenic routes or protected views affected by the proposed development.

14.1.2 Land and Soils

Land and Soils Traffic and Transport

The delivery of materials to the site will lead to potential impact on the surrounding roads network. Mitigation measures to deal with potential impacts are set out in the CEMP.

Land and Soils Water and Hydrology

Any environmentally damaging fluids accidentally spilled on-site have the potential to impact the surrounding hydrological network. Stripping of topsoil will result in exposure of the underlying subsoil layers to the effects of weather and construction traffic and may result in subsoil erosion and generation of sediment laden surface water runoff. The CEMP outlines mitigations measures to prevent such occurrences from happening.

Land and Soils Material Assets (Waste)

It is expected that all excavated materials will be reused on site. Any excavated soil which is determined to be contaminated will be managed according to best practice and disposed of accordingly by a licensed waste disposal contractor. Oil, fuel etc. storage areas are to be decommissioned on completion of the construction phase of the proposed development. Any remaining liquids are to be removed from site and disposed of at an appropriate licenced facility.

Land and Soils Noise and Vibration

The proposed development of the site will result in an increase in noise and vibration in the area during the construction phase. This will be short term. This is dealt with in the Noise and Vibration Chapter of this EIAR.

Land and Soils Air Quality and Climate

The construction traffic associated with the construction of the proposed development will have an impact on the land and soils as well as on the air quality (from dust) on the local environment. This is dealt with in the Air Quality and Climate Chapter of this EIAR.

Land and Soils and Biodiversity

The proposed development will require the removal of the existing topsoil layer across the site as well as the removal of some trees and hedgerows and therefore will interact with biodiversity. No hedgerow clearance or tree felling will occur during the bird breeding season from 1st March to 31st August. The loss of hedgerow will be compensated by the landscaping plans for the proposed development.

Land and Soils and Population and Human Health

The following risk to human health from soils and the geological environment can occur during construction:

- Collapse of trench during excavation works
- Accidental Leaks & Spillages
- Dust generation can also occur during extended dry weather periods as a result of construction traffic.

With the implementation of the mitigation measures in the CEMP the likelihood of such events occurring would be minor with non-significant localised impacts. On completion of the construction phase, there will no further anticipated risks to human health from the soils and geological environment.

Land and Soils and Landscape and Visual

Land and soils has the potential to impact on landscape and visual impact during the construction phase of the proposed development. Construction works for the proposed development will be visible particularly in areas close to the site boundary. However these impacts will be temporary and will be mitigated by construction hoarding and fencing.

14.1.3 Air Quality and Climate and Material Assets (Traffic and Transport)

There is potential for interaction between air quality and climate and traffic and transport. The dominant source of air pollutant emissions resulting from the proposed development will be from road traffic. It has been concluded that the proposed development will lead to an insignificant increase in pollutant levels.

The dominant source of CO₂ emissions resulting from the proposed development during operation will be from road traffic. The impact of the increased road traffic CO₂ emissions in 2029 is equivalent to at most 0.001% of Ireland's ESD target for non-ETS emissions in 2020 and thus the impact on macroclimate will be negligible.

During the construction phase there is potential interaction due to dust that might be generated by construction vehicles. Chapter 7 and the CEMP set out mitigation measures to address this.

Other interactions with air quality and climate have been considered above.

14.1.4 Noise and Vibration and Material Assets (Traffic and Transport)

There is potential for interaction between noise and vibration and traffic and transport. A variety of items of plant will be in use during the construction phase of the development, such as excavators, lifting equipment, dumper trucks, compressors and generators. Due to the nature of the activities undertaken on a large construction site, there is potential for generation of significant levels of noise. The flow of vehicular traffic to and from a construction site is also a potential source of relatively high noise levels.

However as noted the application of the practicable noise control mitigation measures and controlled hours of working will ensure that the impact of construction noise and vibration associated with the development is mostly within the criteria limits established in this report and minimised as far as practicable.

With regard to traffic once operational Chapter 8 recommends that retail unit delivery truck events should be restricted to daytime periods only. The noise impact generated by additional traffic movements associated with the development is predicted to be of an imperceptible impact on existing ambient noise levels at receptors along the local road network. The noise impact assessment has demonstrated that no additional noise mitigation measures will be required in respect of additional vehicular traffic on public roads, vehicular traffic on new internal roads or development car parking.

Other interactions with noise and vibration have been considered above.

14.1.5 Biodiversity

Biodiversity and Water and Hydrology

Any negative impacts on water quality arising from accidental spillages etc has the potential to impact on biodiversity. The potential for these impacts has been considered in the Biodiversity Chapter and Water and Hydrology Chapters of this EIAR and mitigation measures have been outlined where required.

Biodiversity and Landscape Impact

There will be interaction between biodiversity and landscape. The proposed development requires the removal of some trees and hedgerows. The Biodiversity Chapter of the EIAR sets out mitigation measures in this regard. No hedgerow clearance or tree felling will occur during the bird breeding season from 1st March to 31st August. Existing trees being retained at the site and its immediate environs will be protected in line with current guidelines (e.g. NRA (now TII) 2006a). The landscaping plan incorporates the retention of c.2,165m of hedgerow and the loss of hedgerow will be compensated by the landscaping plans for the proposed development. The new planting of woody species will connect to other planted areas or existing hedgerows and treelines to maintain connectivity to the wider landscape. The species mix comprises native and non-native species and includes some pollinator friendly tree species listed in the *Pollinator Friendly Planting Code*.

It is noted that the hedgerows within the site are predominantly species poor with many gaps. As such, the landscaping plan will provide a net gain in the cover of woodland habitats at the proposed site. The landscaping plan also includes a 'wildflower meadow', which incorporates several ornamental species listed in the *Pollinator Friendly Planting Code*.

Table 14.1 Matrix of Interactions between Environmental Factors

	Population and Human Health	Land and Soils	Water and Hydrology	Air Quality and Climate	Noise and Vibration	Material Assets – Services, Utilities and Waste	Material Assets – Traffic and Transport	Biodiversity	Cultural Heritage	Landscape and Visual Impact
Population and Human Health		✓	✓	✓	✓	✓	✓			✓
Land and Soils	✓		✓	✓	✓	✓	✓	✓		✓
Water and Hydrology	✓	✓						✓		
Air Quality and Climate	✓	✓					✓			
Noise and Vibration	✓	✓					✓			
Material Assets – Services, Utilities and Waste	✓	✓						✓		
Material Assets – Traffic and Transport	✓	✓		✓	✓					
Biodiversity		✓	✓							✓
Cultural Heritage										
Landscape and Visual Impact	✓	✓						✓		