16 INTERACTIONS

16.1 Introduction

As a requirement of the Planning Regulations and the Environmental Protection Agency's '*Guidelines on information to be contained in Environmental Impact Assessment Reports*' (2022), interrelationships between various environmental aspects must be considered when assessing the impact of the Proposed Development, as well as individual significant effects. The significant effects of the Proposed Development and the proposed mitigation measures have been detailed in the relevant chapters of this EIAR. However, as with all developments that pose potential environmental effects, there also exists potential for interactions/interrelationships between the effects of different environmental aspects. The results may exacerbate or ameliorate the magnitude of effects. This chapter of the EIAR addresses the interactions between the various environmental factors of the Proposed Development.

The following Section is directed by Article 3 section 1(e) of the EIA Directive. The EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022), Advice Notes for Preparing Environmental Impact Statements (Draft, September 2015) and OPR Practice Note PN02 Environmental Impact Assessment Screening (June 2021) were also considered.

Article 3 of the Directive states:

1. 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)

16.2 Study Methodology

The interactions between effects on different environmental factors have been addressed throughout this EIAR. Close co-ordination and management with the EIAR team was carried out to ensure that all likely relevant interactions were addressed at the scoping stage of the EIAR, and interactions have been adequately assessed.

Following an assessment of the EIAR, a matrix was produced to display where interactions between effects on different factors have been addressed. This has been carried out by use of chapter headings included in the EIAR and details of any interaction during all phases of the Proposed Development.

16.3 Competency of the Authors

This chapter has been prepared by Aisling Jones, Environmental Consultant with DNV. Aisling has a Bachelor of Civil Law degree from University College Dublin and a Master of Science degree in Environmental and Climate Law also from University College Dublin. Aisling has experience preparing Environmental Impact Assessment (EIA) Screening Reports, Windfarm Feasibility Studies, Construction Environmental Management Plans (CEMP)s, Interactions, Mitigation and Monitoring, Material Assets (Waste and Utilities) Chapters of Environmental Impact Assessment Reports (EIAR)s.

This report was reviewed by Grainne Ryan, Principal EIA Consultant at DNV. Gráinne is an Environmental Consultant with over 11 years' experience, specialising in EIAs for strategic infrastructure, renewable energy, residential, industrial and pharmaceutical projects. Gráinne has a B.A, in Geography, Planning and Environmental Policy, an MSc in Environmental Policy and a Post Graduate Diploma in Project Management.

This chapter has been approved by Catherine Keogan, Technical Director and EIA Lead at DNV. Catherine is an environmental consultant with 37 years' experience in consultancy, specialising in EIAs for large-scale residential, commercial developments, pharmaceutical, BESS and solar projects working closely with a range of developers, planning consultants and architects within the public and private sector. Catherine has a B.Sc. (Hons) in Analytical Science and a Post Graduate Diploma in Renewable Energy Technology Systems.

16.4 Interactions

The following matrix has been produced to show potential significant interactions between the different factors that have been addressed, see Table 16-1.

In preparing the EIAR each of the specialist consultants have and will continue to liaise with each other and will consider the likely interactions between effects predicted as a result of the Proposed Development during the preparation of the proposals for the site and this ensures that mitigation measures are incorporated into the design process.

As this EIAR document has been prepared by a number of specialist consultants an important aspect of the EIA process is to ensure that interactions between the various disciplines have been taken into consideration.

The principal interactions requiring information exchange between the environmental specialists and the design team are summarised in Table 16-2 to Table 16-12.

Table 16-1: Interactions between Factors

Interaction	4. Population and Human Health	5. Biodiversity	6. Land and Soils	7. Hydrology and Hydrogeology	8. Air Quality	9. Climate	10. Noise and Vibration	11. Landscape and Visual	12. Archaeology and Cultural Heritage	13. Material Assets: Waste and Utilities	14. Material Assets: Traffic and Transport
Population and Human Health		x	✓	✓	✓	✓	✓	✓	x	✓	✓
Biodiversity	x		✓	✓	✓	✓	x	✓	x	x	x
Land and Soils	x	✓		✓	✓	✓	x	x	x	✓	✓
Hydrology and Hydrogeology	✓	✓	✓		x	✓	x	x	x	✓	x
Air Quality	✓	✓	✓	x		✓	x	x	x	x	✓
Climate	x	x	✓	x	x		x	x	x	✓	x
Noise and Vibration	✓	✓	x	x	x	x		x	x	x	✓
Landscape and Visual Amenity	✓	x	✓	x	x	x	x		x	x	x
Archaeology, Architectural and Cultural Heritage	x	x	x	x	x	✓	x	✓		x	x
Material Assets: Waste and Utilities	x	x	✓	✓	x	✓	x	x	x		x
Material Assets: Traffic and Transport	x	x	✓	x	✓	✓	✓	x	x	✓	

x	No Interaction
✓	Potential Interaction
	N/A

Table 16-2. Population and Human Health

Population and Human Health	
Summary	
Chapter 4 of this EIAR (Population and Human Health) details the direct and indirect effects of the Proposed Development on Population and Human Health; and sets out any required mitigation measures where appropriate. The Proposed Development has the potential to cause dust nuisances during the construction phase as well as noise and vibrations from plant machinery and traffic.	
Interactions	
Hydrology and Hydrogeology	Interactions between water and population and human health have been considered. The Proposed Development has the potential to cause health issues as a result of impacts on local drinking water. However, the mitigation measures outlined in Chapter 7 outlines that Proposed Development will not result in significant effects on water which therefore will not have a significant effect on the local population.
Air Quality	Interactions between air quality and population and human health have been considered. The Proposed Development has the potential to cause health issues as a result of impacts on air quality. However, the mitigation measures outlined in Chapter 8 Air Quality outlines that Proposed Development will ensure that all impacts are compliant with ambient air quality standards and human health will not be affected.
Noise and Vibration	Interactions between noise and population and human health have been considered. The Proposed Development has the potential to cause health issues as a result of noise and vibrations. However, the mitigation measures outlined in Chapter 10 Noise outlines that Proposed Development will not result in significant effects which therefore will not have a significant effect on the local population.
Landscape and Visual	Interactions between landscape and visual, and human health have been considered. The Proposed Development has the potential to cause nuisance to the local population. However, the mitigation measures outlined in Chapter 11 Landscape and Visual outlines that Proposed Development will not result in significant effects which therefore will not have a significant effect on the local population.
Material Assets-Traffic	Interactions between transport and human health have been considered. The Proposed Development has the potential to cause a nuisance to the local population. However, the mitigation measures outlined in Chapter 14 Traffic and Transport outlines that Proposed Development will not result in significant effects which therefore will not have a significant effect on the local population.

Conclusions
Potential effects have been outlined in the respective Chapters specified above. The mitigation measures outlined in the respective Chapters outlined above will ensure that there will be no significant adverse effects on the health of the population situated around the Proposed Development.

Table 16-3: Biodiversity

Biodiversity	
Summary	
Chapter 5 of this EIAR, *Biodiversity,* details the direct and indirect effects of the Proposed Development on the local flora and fauna; and sets out any required mitigation measures where appropriate. Biodiversity interacts with several environmental factors including land and soils, hydrology, air quality, climate and microclimate and, noise and vibrations Chapters of the EIAR. Changes to these environmental factors could result in significant impacts on biodiversity such as the following:	
Interactions	
Land & Soils	Interactions between soils & land and biodiversity can occur through the spread of any hazardous material/contaminated land which may occur during the construction stage. The spread of land contaminated with potentially hazardous material could result in habitat degradation of habitats within the Proposed Development site and adjacent/downstream designated sites and their associated qualifying interests. Following the implementation measures outlined within the Construction Environmental Management Plan (CEMP) impacts to habitats, flora and fauna from soils and land interactions are not predicted to be significant.
Hydrology	Interactions between hydrology and biodiversity including habitats, flora and fauna can occur through impacts to water quality either arising from an accidental pollution event or increased sedimentation during the construction stage or an accidental pollution event during the operational stage. This interaction has the potential to result in significant impacts on hydrologically connected habitats and sensitive fauna that rely on these habitats.
Air Quality	Interactions between air quality and flora and fauna in adjacent habitats and designated sites can occur during the construction stage due to dust emissions arising from construction works. This interaction has the potential to result in significant impacts on biodiversity. However, once the dust minimisation measures outlined in the CEMP accompanying this report are implemented, impacts to flora and fauna are not predicted to be significant.
Noise & Vibrations	Interactions between noise and sensitive fauna, namely birds, bats and badgers can occur and arise from increased noise levels during the construction stage. This interaction has the potential to result in significant impacts and has been assessed when considering disturbance impacts during construction. However, for reasons outlined in the relevant sections above (i.e. 5.5) impacts to fauna from noise interactions are not predicted to be significant.

Conclusions
Potential negative impacts have been identified for Land & Soils, Hydrology, Air Quality and Noise & Vibrations. Mitigation measures have been outlined in Chapters 6, 7,8 and 10 respectively.

Table 16-4: Land and Soils

Land and Soil	
Summary	
Chapter 6 of this EIAR, *Land and Soils*, details the direct and indirect effects of the Proposed Development on the local land, soils, and geology; and sets out any required mitigation measures where appropriate. There are a number of potential pollutants associated with the construction and operational phases which have the potential to impact on the environment. The excavation and infilling of soils at the site have the potential to generate nuisance impacts such as dust, noise and sediment run-off. Consideration is given to habitats and species protected by national and international legislation or considered to be of particular conservation importance.	
Interactions	
Population and Human Health	An assessment of the potential effect of the Proposed Development on human health is included in Chapter 4 of this EIAR. There is a potential risk of dust generated from excavation and stockpiling of soil during the construction phase of the Proposed Development posing a human health risk in the absence of standard avoidance and mitigation measures which will be implemented to be protective of human health. Appropriate industry standards and health and safety legislative requirements will be implemented during the construction phase of the Proposed Development that will be protective of site workers. The design and construction of the Proposed Development will be undertaken in accordance with current Building Regulations which will ensure that the site will be suitable for use for the operational phase as a residential development taking account of the geological site setting.
Biodiversity	An assessment of the potential effects of the Proposed Development on the Biodiversity of the site, with emphasis on habitats, flora and fauna which may be effected as a result of the excavation and importation of materials to the site are included in Chapter 5 of this EIAR. It also provides an assessment of the effects of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these effects.
Hydrology and Hydrogeology	An assessment of the potential effect of the Proposed Development on the hydrological and hydrogeological environment is included in Chapter 7 of this EIAR. In the absence of avoidance, remedial, and mitigation measures, construction activities may potentially create pathways for potential sources of contamination to enter underlying groundwater. During the construction phase of the Proposed Development, groundwater vulnerability is expected to temporarily increase. Construction activities will involve the use of potentially hazardous materials such as cementitious materials, fuels, oils, and other substances. An uncontrolled release of these materials, whether

	through containment failure or handling accidents, could affect the surrounding environment. In addition, in the absence of avoidance, remedial and mitigation measures, there is a potential for sediment from excavated soils to enter water runoff and discharge into the receiving Corbally stream, Coldwater stream and Cooldown stream. Procedures for the protection of the receiving water environment are set out in Chapter 7 of this EIAR.
Air Quality and Climate	The excavation of soils across the site and the temporary stockpiling of soils pending reuse or removal offsite has the potential to generate nuisance effects (i.e., dust) during the construction phase of the Proposed Development. An assessment of the potential effect of the Proposed Development on air quality is included in Chapter 8 of this EIAR.
Landscape and Visual	During the construction phase and into the operational phase of the Proposed Development, the site landscape will undergo a change from undeveloped lands to residential use. An assessment of the potential effect of the Proposed Development on the receiving landscape is included in Chapter 11 of this EIAR.
Material Assets: Traffic, Transport, Utilities, Infrastructure and Waste	An assessment of the potential effect of the Proposed Development on the material assets (waste and utilities) and material assets (traffic and transport) are included in Chapter 13 and Chapter 14 of this EIAR, respectively. Where possible, it is intended to retain and re-use the excavated soil and subsoil on the site for engineering fill and landscaping. However, where required, unsuitable soil and subsoil will be removed offsite in accordance with all statutory legislation. There is also a requirement to import soil, subsoil and aggregate materials during the construction phase of the Proposed Development.
Conclusions	
Potential impacts have been outlined in the respective Chapters specified above. The mitigation measures outlined in the CEMP, and the respective Chapters outlined above, will ensure that there will be no significant adverse impacts on the receiving land, soil and geology associated with the construction phase and the operational phase of the Proposed Development.	

Table 16-5: Hydrology and Hydrogeology

Hydrology and Hydrogeology	
Summary	
Chapter 7 of this EIAR, *Hydrology and Hydrogeology*, provides an assessment of the potential impacts of the Proposed Development on hydrology, water and hydrogeology and sets out any required mitigation measures where appropriate. Consideration is given to habitats and species protected by national and international legislation or considered to be of particular conservation importance.	
Interactions	
Population and Human Health	An assessment of the potential effect of the Proposed Development on human health is included in Chapter 4 of this EIAR. No public health issues associated with the water (hydrology and hydrogeology) conditions at the site have been identified for the construction phase or operational phase of the Proposed Development. Appropriate industry standard and health and safety legislative requirements will be implemented during the construction phase that will be protective of site workers.
Biodiversity	An assessment of the potential impacts of the Proposed Development on the biodiversity of the site, with emphasis on habitats, flora and fauna which may be impacted, as is included in Chapter 5 of this EIAR, such as potential pollution of waterbodies impacting on flora and fauna in the absence of mitigation measures. Chapter 5 of this EIAR addresses impacts of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these impacts.
Land and Soils	An assessment of the potential impact of the Proposed Development on the existing land, soils and geological environment during the construction phase and operational of the Proposed Development is set out in Chapter 6 of this EIAR. In the absence of avoidance and mitigation measures, there is a potential for sediments from excavated soils entering the drainage network and tracking downstream during the construction phase.
Material Assets Waste and Utilities	An assessment of the potential impact of the Proposed Development on the material assets including built services and infrastructure has been set out in Chapter 13 of this EIAR. During the construction phase of the Proposed Development, discharges of water to the public foul sewer will be in accordance with the necessary discharge licence issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations.

	During the operation phase of the Proposed Development, any discharges to the public foul sewer and supplementary water supply to the Proposed Development will be under consent from UE.
Conclusions	
The protective/avoidance/mitigation measures that will be applied as set out in the CEMP will ensure that the Proposed Development will not give rise to any likely significant impacts.	

Table 16-6: Air Quality

Air Quality	
Summary	
Chapter 8 (a) of this EIAR, *Air Quality*, provides an assessment of the potential impacts of the Proposed Development on ambient air quality and sets out appropriate mitigation measures where necessary. Air quality does not have a significant number of interactions with other topics. The greatest potential effects on air quality include dust from the construction phase of the Proposed Development.	
Interactions	
Population and Human Health	The most significant interactions are between human beings and air quality. An adverse impact due to air quality in either the construction or operational phase has the potential to cause health and dust nuisance issues. The mitigation measures that will be put in place at the Proposed Development will ensure that the impact of the Proposed Development complies with all ambient air quality legislative limits and therefore the predicted impact is long term and neutral with respect to human beings.
Biodiversity	Dust emissions have the potential to settle on plants causing impacts to local ecology. Mitigation measures during the construction phase of the proposed development will ensure that dust generation is minimised and the effect on biodiversity will be short term, imperceptible and neutral.
Land and Soils	Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between air quality and land and soils and the water environment (hydrology) in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that interactions between air quality and land and soils and hydrology will be short-term and imperceptible.
Traffic	Interactions between air quality and traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts of the Proposed Development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the site. In this assessment, the impact of the interactions between traffic and air quality are considered to be imperceptible.
Conclusions	
Mitigation measures employed at the Proposed Development will ensure that no significant impacts occur. No other significant interactions with air quality have been identified.	

Table 16-7: Climate

Climate	
Summary	
Chapter 9 of this EIAR, *Climate*, provides an assessment of the potential impacts of the Proposed Development on ambient climate and sets out appropriate mitigation measures where necessary. The greatest potential effects on climate include dust from the construction phase of the Proposed Development.	
Interactions	
Population and Human Health	Human health and well-being are closely linked to climate factors. Climate change can exacerbate health issues such as heat stress, respiratory conditions, and vector-borne diseases. While the Population and Human Health chapter focuses on direct health determinants, the Climate Chapter also considers indirect pathways through which climate-related measures may influence public health. These include: • Air quality impacts from construction and operational traffic, which are addressed in parallel with climate assessment; • Noise and vibration disturbance, particularly in relation to sensitive receptors such as residential dwellings; • Green infrastructure and landscaping, which contribute to urban cooling, improved air quality, and enhanced amenity; • SuDS and water management systems, which reduce flood risk and associated health hazards; and • Traffic emissions, which were assessed using DMRB LA 114 criteria and scoped out for both construction and operational phases, confirming no significant climate-related health effects These measures support climate resilience and help safeguard public health in the context of a changing climate.
Biodiversity	Climate change can alter habitat conditions, encourage spread of invasive species, disrupt species distributions, and affect ecological balances. These shifts may impact local flora and fauna, particularly in sensitive coastal and estuarine environments adjacent to the Proposed Development. The Biodiversity chapter outlines a suite of mitigation and enhancement measures that directly support climate resilience, including: • Planting of native tree and hedgerow species selected for their adaptability to changing climatic conditions; • Integration of green infrastructure such as permeable paving, green walls, and pollinator-friendly planting to support ecosystem services;

	• Sustainable drainage systems (SuDS) to manage water quality and quantity; and • Lighting design to reduce disturbance to nocturnal species. • Long-term habitat management, including for the prevention of the introduction and spread of invasive species. • Biodiversity measures listed above and included within the biodiversity chapter align with national and EU climate adaptation strategies, contributing to broader goals such as carbon neutrality, nature-based solutions, and ecosystem-based adaptation. Such strategies include: • CAP25 explicitly supports a transition to a biodiversity-rich, climate-resilient, and environmentally sustainable economy • National Adaptation Framework (NAF) 2025, which identifies biodiversity as a priority sector for climate adaptation, promotes ecosystem-based adaptation and nature-based solutions to address climate risks such as flooding, drought, and habitat loss, and encourages local and sectoral adaptation plans to integrate biodiversity and climate resilience. • EU Adaptation Strategy (2021 Update) which emphasizes nature-based solutions (NbS) as a key cross-cutting priority. Supports ecosystem restoration, urban greening, and coastal protection as climate adaptation tools, and promotes integration of NbS into urban planning, water management, and disaster risk reduction. • EU Biodiversity Strategy 2030 which aims to restore at least 30% of degraded ecosystems by 2030. Recognizes biodiversity as essential for climate mitigation and adaptation, and supports green infrastructure and ecological connectivity to enhance resilience. These measures contribute to carbon sequestration, urban cooling, and ecological connectivity, enhancing the site's resilience to climate change and supporting long-term biodiversity conservation.
Land and Soil	Climate change can affect soil moisture, erosion rates, and land productivity. Increased rainfall may lead to soil erosion, while extended dry periods can degrade soil quality. The Proposed Development includes mitigation measures to manage these risks. Site investigations confirmed that soils across the Proposed Development site are of medium sensitivity and are underlain by tills and brown earths, with no evidence of anthropogenic contamination. Laboratory testing found that concentrations of heavy metals, PAHs, and other substances were below detection limits and within inert waste acceptance criteria. As such, excavation is not required for remediation purposes but is necessary to achieve formation levels for roads, services, and building foundations. The Hydrological and Hydrogeological Risk Assessment Report (DNV, 2025) estimates that approximately 184,442 m³ of soil, stones, clay, and made ground will be excavated to facilitate construction. Where possible, it is intended for suitable soil to be reused onsite, while it is estimated that 103,689 m³ of surplus material will be removed offsite for appropriate reuse,

	recovery, recycling, or disposal in accordance with relevant waste legislation and permitting requirements. To mitigate risks associated with soil disturbance, the Proposed Development includes a suite of soil management measures. These include designated stockpile areas, segregation of reusable and waste materials, sampling before reuse, and controls to prevent pollution from construction materials such as cement or fuels. With these measures in place, residual effects on land, soils, and geology during both construction and operation are assessed as imperceptible and non-significant. The Construction Environmental Management Plan (CEMP) outlines procedures for managing soil stockpiles, preventing dust generation, and controlling runoff, all of which are critical in the context of climate variability. No significant adverse effects are anticipated during the operational phase, and the site will be suitable for long-term residential and commercial use.
Hydrology and Hydrogeology	Climate variability, such as increased rainfall or prolonged droughts, can affect water availability, quality, and management practices. This includes effects on stormwater runoff, flood risk, and water supply. The Hydrology Chapter sets out a detailed water-management strategy, including multi-catchment SuDS with treatment and attenuation sized for 2-, 30-, and 100-year storm events (with a 20% climate-change allowance), petrol interceptors, and compensatory flood-storage measures, ensuring the development does not increase off-site flood risk and that residual hydrological impacts remain imperceptible.
Air Quality	Air quality and climate are interrelated due to shared sources of emissions, particularly from the combustion of fossil fuels during both the demolition/construction and operational phases. These activities generate pollutants that contribute to both local air quality impacts and global climate change. The air quality assessment was undertaken in parallel with the climate assessment to ensure consistency in evaluating emissions and their potential impacts.
Material Assets Waste and Utility	The Proposed Development has been designed in accordance with relevant building design standards, including those governing the provision of electricity, water, gas, and telecommunications. Sustainable power and heat sources have been incorporated into the design to reduce reliance on imported fossil fuels and lower greenhouse gas (GHG) emissions. These design choices represent a direct and indirect interaction with climate and are assessed in this chapter.
Archaeology and Cultural Heritage	Cultural heritage sites are at risk due to climate change, with increased weathering, flooding, and temperature fluctuations potentially accelerating

	their deterioration. Mitigation measures employed at the Proposed Development will ensure that no significant impacts occur.
Traffic	Traffic-related emissions are a key contributor to climate change. The UK Highways Agency's DMRB guidance document LA 114 (2019) outlines criteria for determining whether a detailed climate assessment is required. These include: • A change of more than 10% in Annual Average Daily Traffic (AADT); • A change of more than 10% in the number of heavy-duty vehicles; or • A change in daily average speed of more than 20 km/hr These criteria were applied to both the construction and operational phases of the Proposed Development. For the construction phase, the assessment presented in Chapter 14: Traffic (2025) confirms that peak traffic volumes generated during construction will remain below the 30% uplift threshold defined in IEMA guidance, with all studied links showing increases of less than 20%. With embedded mitigation measures, including haul-route scheduling, access controls, and a Construction Traffic Management Plan, no significant traffic-related effects are anticipated during the construction phase. For the operational phase, traffic modelling undertaken for the EIAR indicates that no road link or junction within the study area will experience a traffic uplift exceeding 10% in the Opening Year (2032) or Design Year (2032), in line with TII protocols. This modelling, which incorporates cumulative impacts from nearby permitted and proposed developments, confirms that the surrounding network will continue to operate effectively and safely. As such, no significant traffic or transport effects are anticipated during the operational phase, and the Proposed Development is expected to integrate sustainably with the existing transport infrastructure. In summary, the Proposed Development's interactions with climate encompass a range of factors including GHG emissions, water resources, biodiversity, soil, human health, and cultural heritage. Effective mitigation strategies and robust monitoring will be essential to address these interactions, minimise adverse effects, and ensure the development's resilience to climate change.
Conclusions	
Mitigation measures employed at the Proposed Development will ensure that no significant impacts occur.	

Table 16-8: Noise and Vibration

Noise and Vibration	
Summary	
Chapter 10 of this EIAR, *Noise and Vibration*, provides a description and assessment of the likely impact of the proposed activities from noise, and sets out appropriate mitigation measures where necessary.	
Interactions	
Population and Human Health	In this EIAR, the Noise and Vibration chapter has been developed in close coordination with the Population and Human Health chapter to assess the potential effects of noise on NSLs. The location of NSLs informed the selection of assessment locations for noise modelling. Predicted noise levels from both the construction and operational phases have been evaluated in terms of their potential effects on human health, including annoyance and disturbance. The integrated approach ensures that the assessment considers, not only technical compliance with noise limits, but also the broader implications for community wellbeing.
Material Assets Traffic	This chapter incorporates data from the traffic consultants to assess the potential noise effects from both construction and operational traffic associated with the Proposed Development. Annual Average Daily Traffic (AADT), vehicle speed and vehicle types (including HGVs) have been considered to calculate the additional noise generated by the Proposed Development, relative to the baseline conditions. Based on the predicted increase in traffic volumes and traffic levels increasing less than 25%, this will likely equate to an increase of noise levels in the range of 1dB(A). This increase is considered negligible, as the lowest decibel change the human ear can discern is 3dB making this increase negligible in terms of magnitude of change.
Conclusions	
Noise associated with the operational plant or machinery will not create any significant adverse impacts beyond the site boundary. Mitigation and monitoring measures will be incorporated to further reduce the potential for noise generation from the Proposed Development.	

Table 16-9: Landscape and Visual

Landscape and Visual	
Summary	
Chapter 11 of the EIAR, *Landscape and Visual Assessment*, provides a description and assessment of the likely impact of the Proposed Development on the landscape and visual amenities of the area.	
Interactions	
Population and Human Health	The enhanced landscape design contributes positively to local amenity, supporting mental well-being and encouraging outdoor recreation and tourism.
Biodiversity	Proposed landscape planting and green infrastructure can enhance habitat diversity and support ecological connectivity across the site.
Archaeology and Cultural Heritage	There is an impact on landscape but it is consistent with the prevailing planning policy context and sustainable development objectives enunciated in international, national, regional and local policy and the impact can be considered moderate.
Conclusions	
The impact on landscape is consistent with the prevailing planning policy context and sustainable development objectives enunciated in international, national, regional and local policy.	

Table 16-10: Archaeology and Cultural Heritage

Archaeology and Cultural Heritage	
Summary	
Chapter 12 of the EIAR, *Archaeology and Cultural Heritage,* provides information on the known architectural, archaeological, and cultural heritage sites in the study area.	
Interactions	
N/A	No interactions have been identified.
Conclusions	
No interactions have been identified.	

Table 16-11: Material Assets: Waste and Utilities

Material Assets - Waste and Utilities	
Summary	
Chapter 13 of the EIAR, Material Assets: Waste and utilities provide an assessment of the potential impacts of the Proposed Development on Material Assets including built services and infrastructure.	
Interactions	
Population and Human Health	In the absence of mitigation, the improper removal, handling, and storage of waste could have adverse effects on the health of construction workers. Extended power or telecommunications outages, or disruption to water supply or sewerage systems for existing properties in the area, could adversely affect the surrounding human population and their overall health. Chapter 4: Population and Human Health of this EIAR has concluded that no long-term, significant adverse effects are likely to impact Population and Human Health as a result of the Proposed Development.
Land and Soil	Improper handling and segregation of hazardous or contaminated wastes could lead to the contamination of soil and stones excavated from the site. Potential effects on land and soil are addressed in Chapter 6 of this EIAR.
Hydrology and Hydrogeology	All connections to the public water network (water supply or foul sewer), abstractions from water supply and discharges to the foul sewer during the construction and operational phases will be under consent from Uisce Éireann. Potential effects on water and hydrology are addressed in Chapter 7 of this EIAR.
Climate	The Proposed Development has been designed in accordance with all relevant building design standards. Sustainable power and heat sources have been included as part of the building design to reduce reliance on imported fossil fuels and reduce greenhouse gases (GHG) emissions. Direct and indirect effects of the Proposed Development on climate (for example greenhouse gas emissions) and its vulnerability to climate change are assessed in Chapter 9.
Traffic	The Proposed Development will require the removal of excavated soil and transportation to appropriate waste facilities during the construction phase. It is anticipated that all excavated materials will require removal offsite in accordance with all statutory legislation. It is estimated by the Main Contractor that the Construction Phase of the Proposed Development will involve the excavation of 184,422m3 of soil for the construction of building foundations, drainage and other infrastructure. It is anticipated that all surplus soil arising from groundworks will require off-

	site removal for reuse or recovery in accordance with appropriate statutory consents and approvals. (DNV, 2025) This has the potential to negatively affect the surrounding road network. The removal of all soil from the site will be undertaken in accordance with all applicable statutory legislation and will be the responsibility of the main contractor. Potential effects on traffic are addressed in Chapter 12 of this EIAR. It is expected that the majority of traffic generated by the Proposed Development will be generated during the operation phase through the general movement of residents of the development. (DNV, 2025)
Conclusions	
Potential impacts have been outlined in the respective Chapters specified above. The mitigation measures outlined in the CEMP, and the respective Chapters outlined above, will ensure that there will be no significant adverse impacts on the receiving land, soil and geology associated with the construction phase and the operational phase of the Proposed Development.	

Table 16-12: Material Assets - Traffic

Material Assets - Traffic	
Summary	
Chapter 14 of the EIAR, *Material Assets: Traffic*, provides an assessment of the potential impacts of the Proposed Development on Material Assets including traffic. The design team has engaged collaboratively throughout the design process to ensure that the Proposed Development adopts a sustainable, integrated approach that minimises environmental impacts and optimises multimodal connectivity.	
Interactions	
Population and Human Health	The development will be implemented in accordance with the Preliminary Construction Management Plan (PCMP) to minimise disruption to local residents during construction. During operation, the scheme's high permeability and high-quality pedestrian and cycle facilities will promote active travel, improve access to public transport, and support healthier lifestyles, consistent with Smarter Travel (2009) and the National Sustainable Mobility Policy (2022).
Land and Soil	During construction, any import or export of materials (associated with excavation or infilling works) will result in a minor, short-term increase in HGV traffic. As outlined in the PCMP, appropriate traffic management measures will be implemented to minimise these effects. The overall impact on land and soil-related traffic movements is assessed as temporary, slight, and not significant in EIA terms.
Air Quality	Post-construction, development traffic will contribute marginally to local traffic volumes. Given that no link exceeds a 10% uplift, the resulting impact on air quality is expected to be imperceptible to slight, long-term, and not significant.
Noise & Vibration	During the construction phase, a temporary, short-term increase in noise and vibration levels may occur due to construction traffic. These effects will be slight, adverse, and not significant in EIA terms. The impact of the operational phase on traffic and transport is assessed as neutral to slight, long-term, and not significant.
Conclusions	
With the implementation of all mitigation measures detailed in the respective Chapters, there will be no negative residual impacts upon the Material Assets: Waste and Utilities.	

16.5 Conclusion

While individual environmental factors have been addressed in detail within their respective chapters of this EIAR, their combined and cumulative interactions have also been considered in this chapter to ensure a holistic understanding of potential impacts. Mitigation measures put in place throughout the construction and operation stages of the Proposed Development aim to minimize these interactions.

16.6 References

Chapter 4 Population and Human Health

Chapter 5 Biodiversity

Chapter 6 Land and Soil

Chapter 7 Hydrology and Hydrogeology

Chapter 8 Air Quality

Chapter 9 Climate

Chapter 10 Noise and Vibration

Chapter 11 Landscape and Visual Impact Assessment

Chapter 12 Archaeology and Cultural Heritage

Chapter 13 Material Assets: Waste Management and Utilities

Chapter 14 Material Assets Traffic