Limerick WWTP Upgrade & Regional Bioresource Centre

EIAR Chapter 8 Air Quality

June 2026

Formerly JB Barry Partners who became part of Egis in 2023

Table of Contents

List of Tables

GLOSSARY AND DEFINED TERMS

Acronym	Description
AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
AASR	Appropriate Assessment Screening Report
ACP	An Coimisiún Pleanála
AD	Anaerobic Digestion
AGS	Aerobic Granular Sludge
AER	Annual Environmental Report
BOD	Biochemical Oxygen Demand
BC	Bioresource Centre
C	Carbon
CAFÉ	Clean Air for Europe Directive
CHP	Combined Heat and Power
DIN	Dissolved Inorganic Nitrogen
ECJ	European Court of Justice
EIAR	Environmental Impact Assessment Report
ELV	Emission Limit Value
EPA	Environmental Protection Agency
ESB	Electrical Supply Board
EU	European Union
FOG	Fats Oils and Grease
FST	Final Settling Tank
GHG	Greenhouse Gas
HGV	Heavy Goods Vehicle
MLPS	Main Lift Pumping Station
MCA	Multi-Criteria Analysis
MRP	Molybdate Reactive Phosphate
IDA	Industrial Development Agency
IFAS	Integrated Fixed-Film Activated Sludge
N	Nitrogen
NDP	National Development Plan
NHA	National Heritage Area
NIS	Natura Impact Statement
NPF	National Planning Framework
NSO	National Strategic Outcomes
NSS	National Spatial Strategy
NWSMP	National Wastewater Sludge Management Plan
P	Phosphorous
PE	Population Equivalent - The amount of wastewater received at a treatment plant (and its design capacity) is measured in units known as population equivalent (or PE). The wastewater received from all sources, e.g. industrial, tourism, commercial, residential, etc., is converted into these units, with one unit of PE representing the wastewater treatment load typically generated by a single person.
PFF	Pass Forward Flow
PFT	Picket Fence Thickener

Acronym	Description
SEA	Strategic Environmental Assessment
SBR	Sequencing Batch Reactor
SHC	Sludge Hub Centre
SIA	Stable Isotope Analysis
SID	Strategic Infrastructure Development
Sludge	Solid by-products of wastewater
SPA	Special Protection Area
SS	Suspended Solids
UWWTD	Urban Wastewater Treatment Directive
WFD	Water Framework Directive
WWDA	Wastewater Discharge Authorisation
WWTP	Wastewater Treatment Plant
WSPS	Water Services Policy Statement
ZTV	Zone of Theoretical Visibility
PS	Pumping Station
QI	Qualifying Interest
RAS	Return Activated Sludge
RBC	Regional Bioresource Centre
RSES	Regional Spatial and Economic Strategy
SAC	Special Area of Conservation
TDS	Total Dry Solids
THP	Thermal Hydrolysis Process
TII	Transport Infrastructure Ireland

DEPARTMENTS AND STAKEHOLDERS

Departments & Stakeholders	Acronym (where applicable)
An Coimisiún Pleanála	ACP
Department of Public Expenditure and Reform	DPER
Department of Climate Action, Communication Networks and Transport	CACNaT
Department of Communications, Climate Action and Environment – Changed in 2020	DCCAE
Department of Culture, Heritage and the Gaeltacht – Changed in 2020	DCHG
Department of Finance	DoF
Department of Housing, Planning and Local Government – Changed in 2020	DHPLG
Department of Housing, Local Government and Heritage	HLGaH
Environmental Protection Agency	EPA
Geological Survey Ireland	GSI
Group Water Schemes	GWS
Inland Fisheries Ireland	IFI
Irish Rail (Iarnród Éireann)	IR
Uisce Éireann	UÉ
Limerick City & County Council	LCCC
Local Authority	LA
National Monuments Service	NMS
National Parks & Wildlife Service	NPWS
National Roads Authority	NRA
National Transport Authority	NTA
Office of Public Works	OPW
Ordnance Survey Ireland	OSi
Southern Regional Assembly	SRA

8 AIR QUALITY

8.1 Introduction

This section has been designated to assess the potential air quality impacts associated with the construction and operation of the Limerick Wastewater Treatment Plant (WWTP) Upgrade and Regional Bioresource Centre (RBC) development, hereafter referred to as the 'Proposed Development'.

The work requirements for the Proposed Development are spread over 2 sites, including Limerick WWTP Site and Corcanree Pump Station Site. Both sites are located on the north of Dock Road, west of Limerick City.

This assessment is concerned with dust impacts from the construction phase and traffic impacts from both the construction and operational phases as these are the primary elements with the potential for air quality impacts. The potential odour impacts from the Proposed Development are included in Chapter 07 (Odour) of this EIAR.

8.2 Methodology

8.2.1 Relevant Legislation, Policy and Guidelines

The principal guidance and best practice documents used to inform the assessment of potential impacts on air quality are summarised below.

In addition to specific air quality guidance documents, the following guidelines were considered and consulted in the preparation of this chapter:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Environment, Community and Local Government, August 2018); and
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (European Commission 2017).

The assessment has made reference to national air quality guidelines where available, in addition to international standards and guidelines relating to the assessment of air quality impacts. These are summarised below:

- PE-ENV-01106: Air Quality Assessment of Specified Infrastructure Projects - Overarching Technical Document (Transport Infrastructure Ireland (TII), 2025);
- Guidance on the Assessment of Dust from Demolition and Construction V2.2 (Institute of Air Quality Management (IAQM) IAQM 2024) (hereafter referred to as the IAQM Guidelines); and
- A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites (Version 1.1) (IAQM 2020).

8.2.2 Ambient Air Quality Standards

In order to reduce the risk to health from poor air quality, national and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set.

8.2.2.1 Air Quality Directive

Air quality significance criteria are assessed on the basis of compliance with the appropriate standards or limit values. The applicable standards in Ireland are set out in Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast). This directive

supersedes EU Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (CAFE Directive). Directive (EU) 2024/2881 sets out air quality standards for pollutants to be reached by 2026 and by 2030 which are more closely aligned with the World Health Organisation (WHO) air quality guidelines.

The ambient air quality limit values for pollutants are set out in Annex I of Directive (EU) 2024/2881. Table 1 of Annex I in Directive (EU) 2024/2881 sets out the updated air quality limit values for pollutants to be achieved by 1 January 2030, which are more closely aligned with the WHO air quality guidelines. Table 2 of Annex I in Directive (EU) 2024/2881 sets out the limit values for air pollutants which are to be achieved by 11 December 2026 and are also applicable up to 2030. The limit values in Table 2 of Annex I are the same as the limits set under Directive 2008/50/EC and the Air Quality Standards Regulations 2022.

The Ambient Air Quality Standards Regulations 2022 (S.I. 739 of 2022) (the Air Quality Standards Regulations 2022) further transposed the CAFE Directive and revoked the Air Quality Standards Regulations 2011, as amended. With the adoption of Directive (EU) 2024/2881, Ireland must transpose this directive into national law, i.e. update the Air Quality Standards Regulations, before December 2026.

In relation to the Proposed Development, the applicable limit values are for nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$). The limit values for these pollutants pre- and post- 2030 are outlined in Table 8-1.

TABLE 8-1: AMBIENT AIR QUALITY LIMIT VALUES

Pollutant	Directive (EU) 2024/2881 Annex I Table 2		Directive (EU) 2024/2881 Annex I Table 1	
	Limit Type	Limit Value (to be attained by 2026 and applicable until 2030)	Limit Type	Limit Value (to be attained by 2030)
Nitrogen Dioxide (NO_2)	Hourly limit for protection of human health - not to be exceeded more than 18 times/year	200 µg/m^3	Hourly limit for protection of human health - not to be exceeded more than 3 times/year	200 µg/m^3
	n/a	n/a	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	50 µg/m^3
	Annual limit for protection of human health	40 µg/m^3	Annual limit for protection of human health	20 µg/m^3
Particulate Matter (as PM_{10})	24-hour limit for protection of human health - not to be exceeded more than 35 times/year	50 µg/m^3	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	45 µg/m^3
	Annual limit for protection of human health	40 µg/m^3	Annual limit for protection of human health	20 µg/m^3
Particulate Matter (as $PM_{2.5}$)	n/a	n/a	24-hour limit for protection of human health - not to be exceeded more than 18 times/year	25 µg/m^3
	Annual limit for protection of human health	25 µg/m^3	Annual limit for protection of human health	10 µg/m^3

8.2.2.2 WHO Air Quality Guidelines & Clean Air Strategy

In April 2023, the Government of Ireland published the Clean Air Strategy for Ireland (Government of Ireland, 2023), which provides a high-level strategic policy framework needed to reduce air pollution. The strategy

commits Ireland to achieving the 2021 WHO Air Quality Guidelines Interim Target 3 (IT3) by 2026, the IT4 targets by 2030 and the final targets by 2040 (Table 8-2). The strategy notes that a significant number of EPA monitoring stations observed air pollution levels in 2021 above the WHO targets; 80% of these stations would fail to meet the final $PM_{2.5}$ target of 5 µg/m^3. The strategy also acknowledges that "*meeting the WHO targets will be challenging and will require legislative and societal change, especially with regard to both $PM_{2.5}$ and NO_2*".

Annex II of Directive (EU) 2024/2881 gives assessment thresholds which align with the clean air strategy final 2040 WHO targets. Directive (EU) 2024/2881 states that "*Member States shall endeavour to achieve and preserve the best ambient air quality and a high level of protection of human health and the environment, with the aim of achieving a zero-pollution objective as referred to in Article 1(1), in line with WHO recommendations, and below the assessment thresholds laid down in Annex II.*"

These assessment thresholds relate to monitoring of ambient air quality by Member States, where "*exceedances of the assessment thresholds specified in Annex II shall be determined on the basis of concentrations during the previous 5 years where sufficient data are available. An assessment threshold shall be deemed to have been exceeded if it has been exceeded during at least 3 separate years out of those previous 5 years.*"

TABLE 8-2: WHO AIR QUALITY GUIDELINES 2021

Pollutant	Limit Type	IT3 (2026)	IT4 (2030)	Final Target (2040)
NO_2	24-hour limit for protection of human health	-	-	25 µg/m^3
	Annual limit for protection of human health	20 µg/m^3	-	10 µg/m^3
PM (as PM_{10})	24-hour limit for protection of human health	75 µg/m^3	50 µg/m^3	45 µg/m^3
	Annual limit for protection of human health	30 µg/m^3	20 µg/m^3	15 µg/m^3
PM (as $PM_{2.5}$)	24-hour limit for protection of human health	37.5 µg/m^3	25 µg/m^3	15 µg/m^3
	Annual limit for protection of human health	15 µg/m^3	10 µg/m^3	5 µg/m^3

The applicable air quality limit values for the purposes of this assessment are those set out in Table 8-1. The limit values stipulated under Table 2 of Annex I in Directive (EU) 2024/2881 and the Air Quality Standards Regulations 2022 are applicable for the Proposed Development as it will be constructed and operational prior to 2030.

8.2.2.3 Dust Deposition Guidelines

The concern from a health perspective is focused on particles of dust that are less than 10 microns (PM_{10}) and less than 2.5 microns ($PM_{2.5}$). The EU ambient air quality standards outlined in Table 8-1 have set ambient air quality limit values for PM_{10} and $PM_{2.5}$.

With regards to larger dust particles that can give rise to nuisance dust, there are no statutory guidelines regarding the maximum dust deposition levels that may be generated during the construction phase of a development in Ireland. Furthermore, no criteria have been stipulated for nuisance dust for this specific type of proposed development.

With regard to dust deposition, the German TA-Luft standard for dust deposition (non-hazardous dust) (German VDI, 2002) sets a maximum permissible emission level for dust deposition of 350 mg/m^2/day averaged over a one-year period at any receptors outside the site boundary. The TA-Luft standard has been applied for the purpose of this assessment based on recommendations from the EPA in Ireland in the document titled Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (EPA, 2006). The document recommends that the TA-Luft limit of 350 mg/m^2/day be

applied to the site boundary of quarries. This limit value can be implemented with regard to dust impacts from construction of the Proposed Development, in terms of both sensitive human and ecological receptors.

8.2.3 Construction Phase

8.2.3.1 Dust Assessment

The Institute of Air Quality Management in the UK (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2024) outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. The IAQM methodology has been applied to the construction phase of this development to predict the likely risk of dust impacts in the absence of mitigation measures and to determine the level of site-specific mitigation required. The use of UK guidance is recommended by Transport Infrastructure Ireland in their guidance document Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2025).

The major dust generating activities are divided into four types within the IAQM guidance (IAQM, 2024) to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout (transport of dust and dirt from the construction site onto the public road network).

The magnitude of each of the four categories is divided into large, medium or small scale depending on the nature of the activities involved. The criteria for determining the category for the works involved are outlined in Table 8-3, these are based on the IAQM guidance (IAQM, 2024). The magnitude of each activity is combined with the overall sensitivity of the area to determine the risk of dust impacts from site activities. This allows the level of site-specific mitigation to be determined.

TABLE 8-3: IAQM CRITERIA TO DETERMINE DUST EMISSIONS MAGNITUDE

Dust Emission Magnitude		
Small	**Medium**	**Large**
Demolition		
• Total building volume <12,000 m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber) • Demolition activities <6 m above ground • Demolition during wetter months	• Total building volume 12,000 - 75,000 m^3 • Potentially dusty construction material • Demolition activities 6 – 12 m above ground level	• Total building volume >75,000 m^3 • Potentially dusty construction material (e.g. concrete) • On-site crushing and screening • Demolition activities >12 m above ground level
Earthworks		
• Total site area <18,000 m^2 • Soil type with large grain size (e.g. sand) • <5 heavy earth moving vehicles active at any one time • Formation of bunds <3 m in height • Earthworks during wetter months	• Total site area 18,000 m^2 - 110,000 m^2 • Moderately dusty soil type (e.g. silt) • 5 – 10 heavy earth moving vehicles active at any one time • Formation of bunds 3 – 6 m in height	• Total site area >110,000 m^2 • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • >10 heavy earth moving vehicles active at any one time • Formation of bunds >6 m in height

Dust Emission Magnitude		
Small	**Medium**	**Large**
Construction		
• Total building volume <12,000 m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber)	• Total building volume 12,000 - 75,000 m^3 • Potentially dusty construction material (e.g. concrete) • On-site concrete batching	• Total building volume >75,000 m^3 • On-site concrete batching • Sandblasting
Trackout		
• <20 HDV (>3.5 t) outward movements in any one day • Surface material with low potential for dust release • Unpaved road length <50 m	• 20 – 50 HDV (>3.5 t) outward movements in any one day • Moderately dusty surface material (e.g. high clay content) • Unpaved road length 50 – 100 m	• >50 HDV (>3.5 t) outward movements in any one day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length >100 m

The sensitivity of the area must then be assessed as outlined below. Both receptor sensitivity and proximity to proposed works areas are taken into consideration. For the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time. Commercial properties and places of work are regarded as medium sensitivity while low sensitivity receptors are places where people are present for short periods or do not expect a high level of amenity. Table 8-4 outlines the criteria for determining the sensitivity of the area to dust soiling, dust-related human health effects and dust-related ecological effects as per the IAQM guidance (IAQM, 2024).

TABLE 8-4: CRITERIA FOR DETERMINING THE SENSITIVITY OF THE AREA

Sensitivity of the Area to Dust Soiling Effects on People and Property					
Receptor Sensitivity	**Number of Receptors**	**Distance From Source (m)**			
		<20	**<50**	**<100**	**<250**
High	>100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Sensitivity of the Area to Human Health Impacts						
Receptor Sensitivity	**Annual Mean PM10 Concentration**	**Number of Receptors**	**Distance from Source (m)**			
			<20	**<50**	**<100**	**<250**
High	< 24 µg/m^3	>100	Medium	Low	Low	Low
		10 - 100	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Medium	< 24 µg/m^3	>10	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Low	< 24 µg/m^3	>1	Low	Low	Low	Low

Sensitivity of the Area to Ecological Impacts		
Receptor Sensitivity	Distance from Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Once the dust emission magnitude and sensitivity of the area have been determined the next step, according to the IAQM guidance (IAQM, 2024), is to establish the level of risk by combining the magnitude with the overall sensitivity of the area to dust soiling, human health and ecological effects. The level of risk associated with each activity is determined using the criteria in Table 8-5.

TABLE 8-5: IAQM CRITERIA TO DETERMINE RISK OF DUST IMPACTS

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High risk	Medium risk	Medium risk
Medium	High risk	Medium risk	Low risk
Low	Medium risk	Low risk	Negligible
Earthworks			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Construction			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible
Trackout			
High	High risk	Medium risk	Low risk
Medium	Medium risk	Medium risk	Low risk
Low	Low risk	Low risk	Negligible

8.2.3.2 Traffic Assessment

Construction phase traffic also has the potential to impact air quality. The TII guidance Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 (TII, 2025), states that road links meeting one or more of the following criteria can be defined as being 'affected' by a proposed development and should be included in the local air quality assessment. While the guidance is specific to infrastructure projects, the approach can be applied to any development that causes a change in traffic.

- Annual average daily traffic (AADT) changes by 1,000 or more;
- Heavy duty vehicle (HDV) AADT changes by 200 or more;
- Daily average speed change by 10 kph or more;
- Peak hour speed change by 20 kph or more;

- A change in road alignment by 5m or greater.

The transport consultant has confirmed in Chapter 6 (Traffic and Transportation) Section 6.5.1, that construction phase traffic will not exceed any of the thresholds above for a detailed assessment. Therefore, a detailed air quality assessment of construction phase traffic emissions has been scoped out as there is no potential for significant impacts to air quality.

8.2.4 Operational Phase

8.2.4.1 Traffic Emissions

Operational phase traffic has the potential to impact local air quality as a result of increased vehicle movements associated with the proposed development. The TII scoping criteria detailed in Section 8.2.3.2 were used to determine if any road links are affected by the proposed development and require inclusion in a detailed air dispersion modelling assessment.

The transport consultant has confirmed in Chapter 6 (Traffic and Transportation) Section 6.6.1 that operational phase traffic will not exceed any of the TII criteria for a detailed assessment (Section 8.2.3.2). Therefore, a detailed air quality assessment of operational phase traffic emissions has been scoped out as there is no potential for significant impacts to air quality.

8.2.4.2 Other Emissions

There is the potential for ammonia gas emissions during the operational phase. However, in this instance emissions of ammonia are very small and would have an imperceptible impact on ambient air quality.

A new combined heat and power boiler is proposed as part of the development, as well as the existing boiler currently in place. However, these units each have a capacity of less than 1 MW, and so emissions will therefore not be significant.

There is also a proposed flare, which is to be used as a backup only. Under normal operation, all biogas will be utilised in the CHP boiler. The flare will only operate during start-up/shutdown or fault conditions and is therefore expected to operate infrequently and not as part of routine use.

All non-traffic emissions from the operational phase have therefore been scoped out of further assessment and the impacts determined to not be significant.

8.3 Baseline Environment

8.3.1 Meteorological Data

A key factor in assessing temporal and spatial variations in air quality are the prevailing meteorological conditions. Depending on wind speed and direction, individual receptors may experience very significant variations in pollutant levels under the same source strength (i.e. traffic levels) (WHO, 2006). Wind is of key importance in dispersing air pollutants and for ground level sources. Fugitive emissions of coarse particles ($PM_{2.5}$ - PM_{10}) will increase at higher wind speeds. Thus, measured levels of PM_{10} will be a non-linear function of wind speed.

The nearest representative weather station collating detailed weather records is Shannon Airport meteorological station, which is located approximately 17.1 km north-west of the proposed development at the closest point. For data collated during five representative years (2020 – 2024), the predominant wind direction is westerly to south-westerly (Met Éireann, 2025).

Figure 8-1 below shows the wind roses for Shannon Airport for 2020 to 2024.

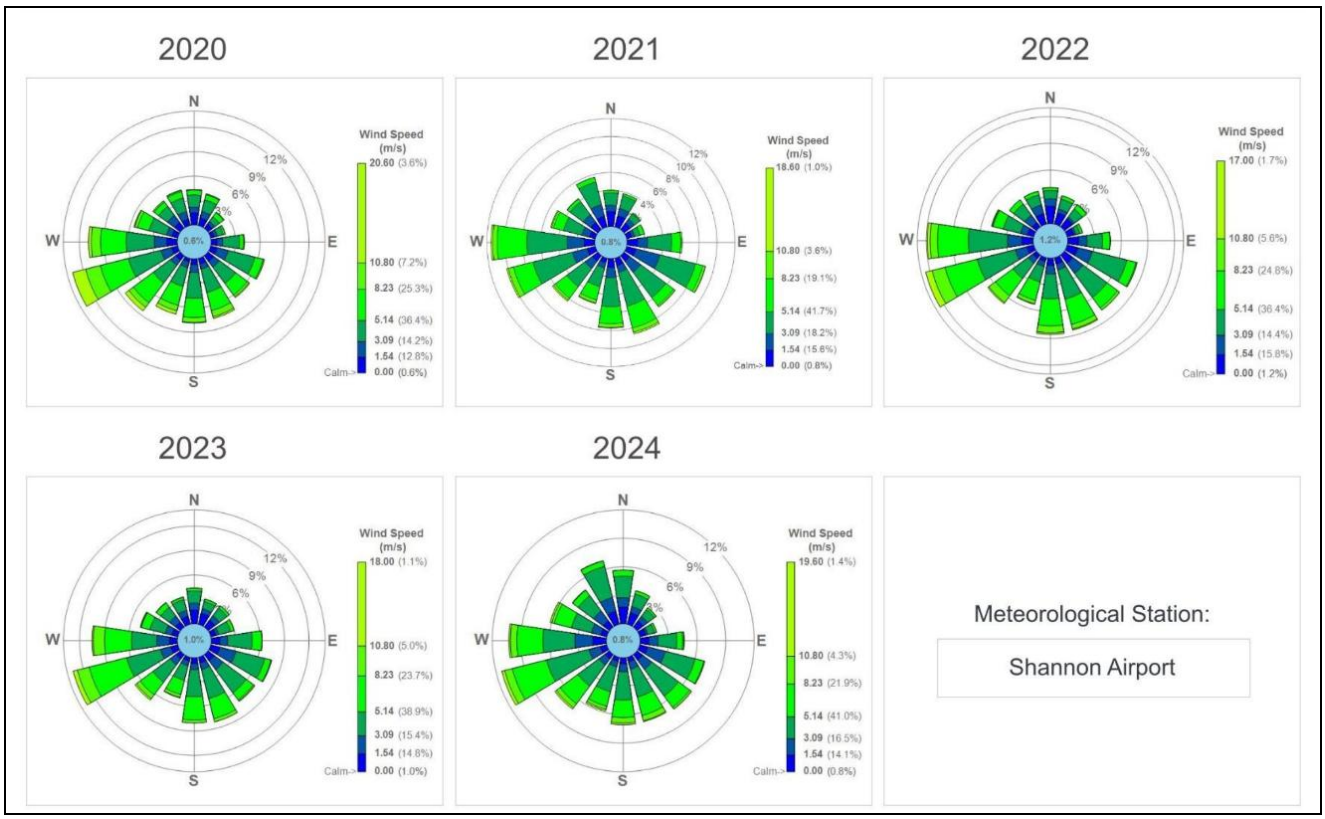

FIGURE 8-1 WIND ROSES FOR SHANNON AIRPORT FOR 2020 TO 2024

8.3.2 Baseline Air Quality

The background concentrations representative of the proposed development location have been derived from ambient air quality monitoring undertaken in recent years by the EPA and Local Authorities (EPA, 2025a). The most recent annual report on air quality "*Air Quality in Ireland 2024*" (EPA, 2025a) details the range and scope of monitoring undertaken throughout Ireland.

As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), as amended, four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA, 2025a). Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 25 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000 is defined as Zone D. In terms of air monitoring, the area of the proposed development is categorised as Zone C (EPA, 2025).

Continuous monitoring by the EPA is carried out at a number of monitoring stations within Zone C; these include urban background sites, roadside (traffic) sites and suburban background sites.

It is necessary to select monitoring stations that are representative of the site location. Not all monitoring stations are considered suitable for determining background pollutant concentrations and must be reviewed on a case-by-case basis to determine the most appropriate EPA monitoring sites for the assessment.

The EPA, on their website (EPA, 2025b), state that background sites generally represent overall area-wide exposure more closely than roadside sites. Roadside monitoring sites are heavily influenced by traffic emissions and are not considered representative of area-wide pollutant levels.

The full suite of EPA Zone C monitoring stations was therefore reviewed to determine those that were most appropriate to estimate background pollutant levels for the area of the Installation.

The selected monitoring sites are suburban background locations and can provide an indicative estimate of the background NO_2 concentrations in the vicinity of the proposed development. Road traffic is a contributor to NO_2 concentrations with concentrations of the pollutant decreasing rapidly with increasing distance from the road source.

The two nearby Limerick monitoring sites are urban background and urban traffic, neither of which are representative of the development location. For this reason, despite being located in Limerick, neither were included.

For the purposes of this assessment, the 5-year average concentration at the selected EPA monitoring stations has been reviewed in order to determine suitable yet conservative background pollutant concentrations for this assessment.

8.3.2.1 NO_2

With regard to NO_2, continuous monitoring data from the EPA (EPA, 2025a) is carried out at a number of monitoring stations within Zone C. The Zone C monitoring stations of Dundalk, Kilkenny Seville Lodge and Portlaoise were considered representative of the site location.

Table 8-6 shows that current NO_2 concentrations at the Zone C monitoring locations are below both the annual and 1-hour limit values, with annual average levels ranging from 5 – 10 µg/m^3 in 2024. The 5-year average data for these sites for the period 2020 – 2024 was used to estimate the current background NO_2 concentration in the region of the proposed development. Over the period 2020 – 2024 for these sites, the average annual mean NO_2 concentration was 8 µg/m^3.

Based on the discussed recent monitoring data and long-term pollutant trends a background NO_2 concentration of 8 µg/m^3 is considered a reasonably conservative estimate and representative of the region of the proposed development for the purposes of this assessment.

TABLE 8-6: BACKGROUND NO_2 CONCENTRATIONS (ZONE C)

Station	Averaging Period	Year				
		2020	2021	2022	2023	2024
Dundalk (Suburban Background)	Annual Mean NO_2 (µg/m^3)	10	11	10	9	10
	1-hr Mean NO_2 values >200 µg/m^3	1	0	1	1	0
Kilkenny Seville Lodge (Suburban Background)	Annual Mean NO_2 (µg/m^3)	4	4	5	4	5
	1-hr Mean NO_2 values >200 µg/m^3	0	0	0	0	0
Portlaoise (Suburban Background)	Annual Mean NO_2 (µg/m^3)	8	8	9	8	8
	1-hr Mean NO_2 values >200 µg/m^3	0	0	0	0	0

8.3.2.2 PM_{10}

Continuous PM_{10} monitoring was carried out at the representative Zone C locations of Athlone, Carlow Town, Dundalk, Ennis, Galway Rahoon, Kilkenny Seville Lodge, Portlaoise, Tralee, Wexford Town, Bray, Drogheda, Greystones, Leixlip and Naas. Over the 2020 – 2024 period annual mean PM_{10} concentrations range from 9 – 20 µg/m^3 (Table 8-7). Hence, long term concentrations are significantly below the annual limit value of 40 µg/m^3. In addition, there were at most 21 exceedances (in Ennis) of the 24-hour limit value of 50 µg/m^3 in 2022, albeit 35 exceedances are permitted per year (EPA, 2024). The overall 5-year average PM_{10} concentration at the representative Zone C sites is 13 µg/m^3. Based on the EPA data, an estimate of the current background PM_{10} concentration in the region of the development is 13 µg/m^3.

TABLE 8-7: BACKGROUND PM_{10} CONCENTRATIONS (ZONE C)

Station	Averaging Period	Year				
		2020	2021	2022	2023	2024
Athlone (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	16	12	12	12	12
	24-hr Mean > 50 µg/m^3 (days)	3	2	3	1	-
Carlow Town (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	11	10	11	10	11
	24-hr Mean > 50 µg/m^3 (days)	1	0	0	0	-
Dundalk (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	13	12	12	13	12
	24-hr Mean > 50 µg/m^3 (days)	2	0	2	1	-
Ennis (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	20	19	20	16	16
	24-hr Mean > 50 µg/m^3 (days)	19	17	21	11	-
Galway Rahoon (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	13	11	13	13	12
	24-hr Mean > 50 µg/m^3 (days)	1	1	0	0	-
Kilkenny Seville Lodge (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	18	17	18	14	12
	24-hr Mean > 50 µg/m^3 (days)	1	2	2	0	-
Portlaoise (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	12	11	12	11	12
	24-hr Mean > 50 µg/m^3 (days)	0	1	0	0	-
Tralee (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	16	17	18	15	15
	24-hr Mean > 50 µg/m^3 (days)	7	11	14	2	-
Wexford Town (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	12	14	15	13	13
	24-hr Mean > 50 µg/m^3 (days)	0	2	5	1	-
Bray (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	-	-	10	11	9
	24-hr Mean > 50 µg/m^3 (days)	-	-	0	2	-
Drogheda (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	-	11	12	11	12
	24-hr Mean > 50 µg/m^3 (days)	-	0	0	0	-
Greystones (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	-	10	12	11	11
	24-hr Mean > 50 µg/m^3 (days)	-	0	0	0	-
Leixlip (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	-	-	11	10	10
	24-hr Mean > 50 µg/m^3 (days)	-	-	1	0	-
Naas (Suburban Background)	Annual Mean PM_{10} (µg/m^3)	-	11	12	11	11
	24-hr Mean > 50 µg/m^3 (days)	-	0	2	1	-

8.3.2.3 $PM_{2.5}$

Monitoring for $PM_{2.5}$ was undertaken at the representative Zone C suburban background locations of Athlone, Bray, Carlow Town, Ennis, Greystones, Naas, Portlaoise, Tralee, Leixlip, Galway Briarhill, Dundalk and Wexford Town over the 2020 – 2024 period (Table 8-8). Average concentrations ranged from 5-20 µg/m^3 (EPA, 2024). The overall 5-year average $PM_{2.5}$ concentration at the representative Zone C sites is 9 µg/m^3. Based on the EPA data, an existing $PM_{2.5}$ concentration in the region of the proposed development is 9 µg/m^3.

TABLE 8-8: BACKGROUND $PM_{2.5}$ CONCENTRATIONS (ZONE C)

Station	Averaging Period	Year				
		2020	2021	2022	2023	2024
Athlone (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	12	9	9	8	9
Bray (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	5	6	6	6	6
Carlow Town (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	7	7	7	6	7
Ennis (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	14	15	16	12	12
Greystones (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	-	6	7	6	6
Naas (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	-	7	8	7	7
Portlaoise (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	8	8	8	7	8
Tralee (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	12	13	13	10	11
Leixlip (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	-	-	7	6	7
Galway Briarhill (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	-	-	10	7	7
Dundalk (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	-	-	20	9	8
Wexford Town (Suburban Background)	Annual Mean $PM_{2.5}$ (µg/m^3)	8	10	10	8	9

8.3.2.4 Summary

Based on the above information the air quality in Zone C suburban background locations is generally good, with concentrations of the key pollutants generally below the relevant limit values set out in Table 2 of Annex I of Directive (EU) 2024/2881. The current pollutant concentrations at most of the monitoring sites are also in compliance with the 2030 limit values set out in Table 1 of Annex I in Directive (EU) 2024/2881 and the clean air strategy. The EPA have indicated that road transport emissions are contributing to increased levels of NO_2 with the potential for breaches in the annual NO_2 limit value in future years at locations within urban centres and roadside locations. In addition, burning of solid fuels for home heating is contributing to increased levels of particulate matter (PM_{10} and $PM_{2.5}$). The EPA predict that exceedances in the particulate matter limit values are likely in future years if burning of solid fuels for residential heating continues (EPA, 2025).

8.3.3 Sensitivity of the Receiving Environment to Dust

The impact to air quality from construction phase activities is assessed at sensitive receptors within 250 m of the development boundary. As mitigation will be applied across both sites, both sites have been assessed together.

In terms of receptor sensitivity to dust soiling, there are 2 sensitive receptors within 20 m of the proposed works area and 44 sensitive receptors within 250 m. Of these, all receptors within 100m are commercial or

industrial. Only 4 receptors are residential, and these are more than 200m from the site boundary. Receptors sensitivity is defined in Section 8.2.3.1. Based on the IAQM criteria outlined in Table 8-4, the sensitivity of the area to dust soiling is considered medium.

In addition to sensitivity to dust soiling, the IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to human health impacts. The criteria take into consideration the current annual mean PM_{10} concentration, receptor sensitivity based on type (residential receptors are classified as high sensitivity) and the number of receptors affected within various distance bands from the construction works. A conservative estimate of the current annual mean PM_{10} concentration in the vicinity of the proposed development is 13 µg/m^3 and as discussed above, there are no high sensitivity residential receptors within 20 m of the site boundary. Based on the IAQM criteria outlined in Table 8-4, the worst-case sensitivity of the area to human health is considered low.

The IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to dust-related ecological impacts. Dust from construction sites deposited on vegetation may create ecological stress within the local plant community. The guidance states that dust impacts to vegetation can occur up to 50 m from the site and 50 m from site access roads, up to 250 m for the site entrance. The following designated ecological sites are within this zone:

- River Shannon and River Fergus Estuaries Special Protection Area (SPA);
- Lower River Shannon Special Area of Conservation (SAC);
- Inner Shannon Estuary – South Shore Proposed National Heritage Area (pNHA); and
- Fergus Estuary and Inner Shannon, North Shore pNHA.

Based on the IAQM criteria outlined in Table 8-4 the worst-case sensitivity of the area to ecology is considered high.

Figure 8.1 in Volume 3 of this EIAR shows the construction dust study area.

8.3.4 Evolution of the Environment in the Absence of the Proposed Development

Ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc). In the absence of the proposed development, there will be no construction activities. Therefore, there will be a neutral impact on ambient air quality, which is ***not significant***.

8.4 Characteristics of the Proposed Development

The Proposed Development pertains to the construction of upgrades to the wastewater treatment plant and bioresource centre, as well as the addition of a new stormwater storage tank. These upgrades will be implemented across the existing Limerick WWTP site and Corcanree PS site. For a full description of the proposed development, please refer to Chapter 3.

The Proposed Development is in an area with commercial, industrial and residential receptors which are sensitive to dust. The major source of emissions to air in the area is the N18 road to the west.

8.5 Potential Impacts

8.5.1 Construction Phase

The greatest potential impact on air quality during the construction phase of the proposed development is from construction dust emissions and the potential for nuisance dust. While construction dust tends to be deposited within 250 m of a construction site, the majority of the deposition occurs within the first 50 m (IAQM, 2024). The extent of any dust generation depends on the nature of the dust (soils, peat, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction. A review of Shannon Airport meteorological data indicates that the prevailing wind direction is westerly to south-westerly (Section

8.3.1). In addition, dust generation is considered negligible on days where rainfall is greater than 0.2 mm. A review of historical 30-year average data for Shannon Airport meteorological station indicates that on average 223 days per year have rainfall over 0.2 mm (Met Éireann, 2025). Therefore, it can be determined that 61% of the time dust generation will be reduced due to natural meteorological conditions.

To determine the level of dust mitigation required during the proposed works, the potential dust emission magnitude for each dust generating activity needs to be taken into account, in conjunction with the previously established sensitivity of the area. The major dust generating activities are divided into four types within the IAQM (IAQM, 2024) guidance to reflect their different potential impacts. These are: demolition, earthworks, construction and trackout (movement of heavy vehicles).

8.5.1.1 Determining the Potential Dust Emission Magnitude

The magnitude of the works under each category can be classified as either small, medium or large depending on the scale of the works involved. The magnitude of each activity (Table 8-9) has been determined below for the proposed development using the criteria in Table 8-3.

TABLE 8-9: POTENTIAL DUST EMISSION MAGNITUDE

Activity	Dust Emission Magnitude	Justification
Demolition	N/A	No demolition activities will be carried out as part of the proposed works.
Earthworks	Medium	The area of earthworks will be between 18,000 and 50,000m^3.
Construction	Medium	The total building volume to be constructed will be between 12,000 and 75,000 m^3.
Trackout	Large	There is the potential for more than 50 outward HDV movements in one day during the construction phase.

8.5.1.2 Determining the Sensitivity of the Area

As determined in Section 8.3.3, there are 2 sensitive receptors within 20 m of the proposed works area and 44 sensitive receptors within 250 m. River Shannon and River Fergus Estuaries SPA, Lower River Shannon SAC, Inner Shannon Estuary – South Shore pNHA and Fergus Estuary and Inner Shannon, North Shore pNHA are all present within 50 m of the Site boundary. The sensitivity of the area to dust soiling, human health impacts and ecological impacts from dust are shown in Table 8-10.

TABLE 8-10: SENSITIVITY OF THE AREA

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Medium	Medium	Low
Human Health	N/A	Low	Low	Low
Ecology	N/A	High	High	High

8.5.1.3 Determining the Risk of Dust Impacts

As detailed in Table 8-5, the predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation.

Table 8-11 below provides a summary of the risk of dust impacts for the proposed development.

There is at most a medium risk of dust soiling impacts, a low risk of dust-related human health impacts and a high risk of ecological impacts associated with the proposed works. Without mitigation in place, construction

dust will have a ***short-term, direct, localised, negative*** and ***slight*** impact on air quality, which may potentially have a significant effect without mitigation in place. As a result, best practice dust mitigation measures associated with high dust risk works will be implemented to ensure there are no significant impacts at nearby sensitive receptors (see Section 8.6).

TABLE 8-11 - RISK OF DUST IMPACTS USED TO DEFINE SITE-SPECIFIC MITIGATION

Potential Impact	Risk of Dust Impacts			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	N/A	Medium Risk	Medium Risk	Low Risk
Human Health	N/A	Low Risk	Low Risk	Low Risk
Ecology	N/A	Medium Risk	Medium Risk	High Risk

8.5.1.4 Traffic

There is also the potential for traffic emissions to impact air quality in the short-term over the construction phase. Particularly due to the increase in HGVs accessing the site. The construction stage traffic has been reviewed and a detailed air quality assessment has been scoped out as the TII assessment criteria in Section 8.2.3.2 are not exceeded.

Following the completion of the initial site clearance works, the generation of HGV movements during the build period will be evenly spread throughout the day and, as such, will not impact significantly during the peak traffic periods.

It can therefore be determined that the construction stage traffic will have a ***short-term, direct, localised, negative*** and ***imperceptible*** impact on air quality.

8.5.2 Operational Phase

The transport consultant has confirmed that traffic associated with the operational development will not exceed the TII scoping criteria for a detailed assessment (see Section 8.2.3.2).

It can therefore be determined that the operational phase emissions will have a ***long-term, direct, localised, negative*** and ***imperceptible*** impact on air quality.

8.6 Mitigation Measures

8.6.1 Construction Phase

Based on the assessment results in Section 8.5.1.3, mitigation associated with a high risk of construction dust impacts is required. Mitigation measures for high risk sites as recommended by IAQM construction dust guidance are detailed in Table 8-12.

TABLE 8-12 - CONSTRUCTION PHASE DUST MITIGATION MEASURES.

Mitigation Measure	
Communications	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
	Display the head or regional office contact information

Mitigation Measure	
Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
	Make the complaints log available to the local authority when asked.
	Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
	Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.
Monitoring	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.
	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
	Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during earthworks and construction.
Preparing and Maintaining the Site	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
	Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period
	Avoid site runoff of water or mud.
	Keep site fencing, barriers and scaffolding clean using wet methods.
	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
	Cover, seed or fence stockpiles to prevent wind whipping.
	Ensure all vehicles switch off engines when stationary – no idling vehicles.

Mitigation Measure	
Operating vehicle/machinery and sustainable travel	Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)
	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems
	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate
	Use enclosed chutes and conveyors and covered skips.
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
	Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste management	Bonfires and burning of waste materials are legally prohibited.
Measures Specific to Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable
	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as is practicable.
	Only remove the cover in small areas during work and not all at once.
Measures Specific to Construction	Avoid scabbling (roughening of concrete surfaces) if possible.
	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
	For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.

Mitigation Measure	
Measures Specific to Trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
	Avoid dry sweeping of large areas.
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
	Record all inspections of haul routes and any subsequent action in a site logbook.
	Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
	Access gates to be located at least 10 m from receptors where possible.

8.6.2 Operational Phase

There is no mitigation required for the operational phase of the proposed development as impacts to air quality are predicted to be ***imperceptible*** (see Section 8.5.2).

4.1 Monitoring or Reinstatement Measures

Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors in the highest dust generating location during the construction phase of the Proposed Development. During dry and windy periods is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m^2/day during the monitoring period of 30 days (+/- 2 days).

4.1.1 Operational Phase

No operational phase monitoring is required.

8.7 Residual Effects

8.7.1 Construction Phase

In order to minimise dust emissions during construction, mitigation will be undertaken during construction activities, as set out in Section 8.6. Provided the dust minimisation measures are adhered to, the predicted residual air quality impacts during the construction phase are ***short-term, direct, localised, negative*** and ***not significant***.

Best practice mitigation measures are proposed for the construction phase of the proposed development, which will focus on the proactive control of dust and other air pollutants, to minimise generation of emissions

at source. The mitigation measures that will be put in place during construction will ensure that the impact complies with all EU ambient air quality legislative limit values, which are based on the protection of human health (see Table 8-1). Therefore, the predicted residual, dust-related, human health impact of the construction phase of the proposed development is ***short-term, direct, localised, negative*** and ***not significant.***

8.7.2 Operational Phase

Emissions of air pollutants during the operational phase are predicted to be imperceptible. Therefore, residual impacts to human health related to air quality will be ***imperceptible***.

8.8 Cumulative Impacts and Interactions

8.8.1 Construction Phase

According to the IAQM guidance (2024) should the construction phase of the proposed development coincide with the construction phase of any other developments within 500 m then there is the potential for cumulative construction dust related impacts to nearby sensitive receptors. No major future planned developments which would be constructed concurrently with the Proposed Development were identified during scoping

However, if this were to change and there are construction sites within 500 m of the Proposed Development, provided the mitigation measures outlined in Section 8.6 are implemented throughout the construction phase significant cumulative dust impacts are not predicted.

8.8.2 Operational Phase

As the operational phase impacts are predicted to be imperceptible, there will be no significant cumulative impact.

8.8.3 Interactions and Interrelationships

Air quality does not have a significant number of interactions with other topics. The most significant interactions are between population and human health 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 soiling 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 which are set for the protection of human health. Therefore, the predicted impact is short-term, direct, localised, negative and not significant with respect to population and human health during construction and long-term, direct, localised, negative and not significant during operation phase. No significant impacts to human health are predicted in relation to air quality.

Construction phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between air quality and land and soils in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils.

Dust generation can occur during extended dry weather periods as a result of construction traffic. Dust suppression measures (e.g. dampening down) will be implemented as necessary during dry periods and vehicle wheel washes will be installed, for example. The works involve stripping of topsoil and excavations, which will remove some vegetation such as trees and scrub. It will also generate dust and potentially impact on the air quality in the locality. However, the generation of dust will be temporary during construction phase and with the proposed mitigation measures in place is not anticipated to have a significant impact on biodiversity.

The impact of the interactions between land, climate, soils and geology, biodiversity and air quality are considered to be short-term, neutral and imperceptible.

No other significant interactions with air quality have been identified.

8.9 Difficulties encountered in Compiling Information

There were no difficulties encountered in compiling information.

8.10 References

Air Pollution Information System (2025) GIS map tool

BRE (2003) Controlling Particles, Vapours & Noise Pollution from Construction Sites

Department of Housing, Planning & Local Government (DHPLG) (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment

Department of the Environment Heritage and Local Government (DEHLG) (2004) Quarries and Ancillary Activities, Guidelines for Planning Authorities

Environmental Protection Agency (2006) Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals)

Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports

Environmental Protection Agency (2025a) Air Quality in Ireland 2024 (& previous annual reports)

Environmental Protection Agency (EPA) (2025b) Air Quality monitoring data website https://airquality.ie/

European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report

German VDI (2002) Technical Guidelines on Air Quality Control – TA Luft

Government of Ireland (2022) Ambient Air Quality Standards Regulations 2022

Government of Ireland (2023) Clean Air Strategy for Ireland

Government of Ireland (2025) National Planning Policy Framework

Institute of Air Quality Management (IAQM) (2024) Guidance on the Assessment of Dust from Demolition and Construction (Version 2.2)

Met Éireann (2025) Met Éireann website: *https://www.met.ie/*Transport Infrastructure Ireland (2025) Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106

World Health Organisation (2006) Air Quality Guidelines - Global Update 2005 (and previous Air Quality Guideline Reports 1999 & 2000)

World Health Organisation (2021) Air Quality Guidelines 2021

Ireland

www.egis-group.com