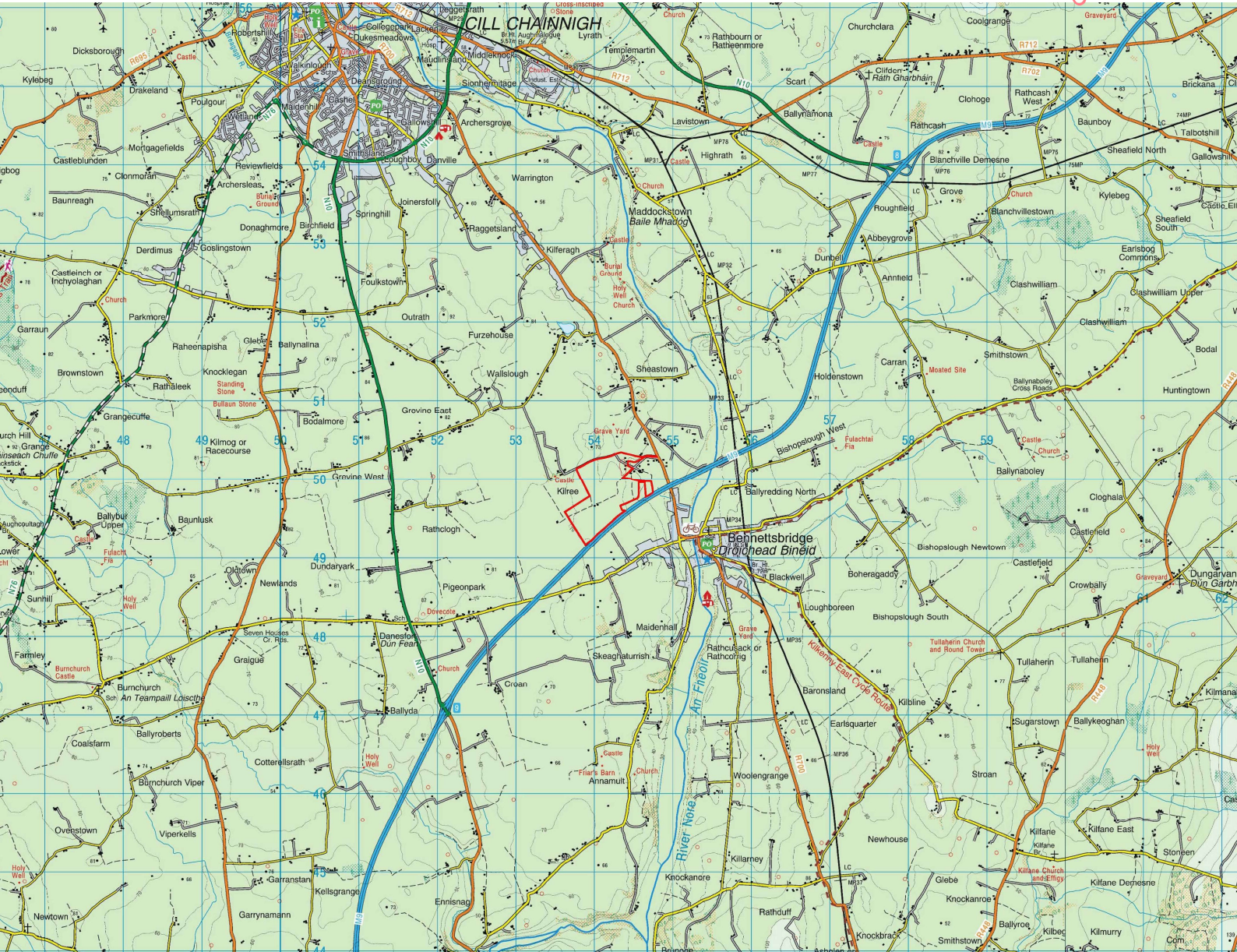


CHAPTER 5

POPULATION AND HUMAN HEALTH

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Table of Contents

CHAPTER 5: POPULATION AND HUMAN HEALTH	3
Introduction	3
Professional Competence	3
Legislative and Policy Context	3
Assessment Methodology and Significance Criteria	5
Study Area	5
Sources of Information	5
Identification and Description of Potential Effects	6
Significance of Effects	7
Baseline Conditions	8
Land Use & Property	8
Population and Settlement Patterns	11
Tourism and recreation	13
Education & Employment	14
Health & Safety	16
Assessment of Potential Effects	19
Land-use & Property	19
Population & Settlement Patterns	20
Tourism & Recreation	23
Education & Employment	24
Human Health	25
Cumulative Effects / Synergistic Effects	31
Land Use & Property	31
Population and Settlement Patterns	31
Tourism & Recreation	31
Education & Employment	31
Health & Safety	31
Do Nothing Scenario	31
Transboundary Impacts	32
Interaction with Other Impacts	32
Mitigation Measures	32
Residual Impact Assessment	33
Monitoring	33
Environmental Monitoring Programme	33
Difficulties Encountered	34
References	35

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CHAPTER 5: POPULATION AND HUMAN HEALTH

Introduction

- 5.1 The purpose of this chapter is to evaluate the potential impact of the proposed development on population and human health.
- 5.2 Whilst there are a range of issues which may impact on human beings (including both population and human health), many of these have been evaluated separately within this EIAR including Land, Soil and Geology (Chapter 7), Hydrology (Chapter 8), Climate (Chapter 9), Air Quality (Chapter 10), Noise and Vibration (Chapter 11), Visual and Landscape (Chapter 12), Traffic (Chapter 13), Heritage (Chapter 14) and Material Assets (Chapter 15).

Professional Competence

- 5.3 Quarry Consulting undertook the impact assessment presented in this chapter on behalf of Bennettsbridge Limestone. The lead consultant for the study was Peter Kinghan (Chartered Mineral Surveyor), Post Graduate Diploma in Environmental Engineering. This chapter and the associated assessment has been completed by Irene Curran who is a chartered town planning consultant (MRTPI) with over 20 years' experience. Irene's qualifications are as follows:

- BSc Environmental Science (Honours) – University of Limerick – 1997.
- MSc Town and Country Planning (Distinction) – Queens University Belfast – 2000.
- Dip Field Ecology - University College Cork – 2014.

Legislative and Policy Context

- 5.4 The introductory text to Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment makes it clear that the intention was that EIA would address human health impacts:

"Whereas the effects of a project on the environment must be assessed in order to take account of concerns to protect human health, to contribute by means of a better environment to the quality of life, to ensure maintenance of the diversity of species and to maintain the reproductive capacity of the ecosystem as a basic resource for life..."

- 5.5 Directive 2011/92/EU (which was amended by Directive 2014/52/EU) on the assessment of the effects of certain public and private projects on the environment makes the requirement to consider population and human health explicit as it introduces into Article 3 'population and human health' as a factor to be considered in Environmental Impact Assessment (EIA):

Article 3

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;....*

- 5.6 EIA Directive does not define the term 'human health', however the 2017 EC Guidance on the preparation of the EIAR states:

"human health is a very broad factor that would be highly project dependent. The notion of human health should be considered in the context of the other factors in Article 3(1) of

the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation and decommissioning of a Project in relation to workers on the Project and surrounding population” (European Commission, 2017).

- 5.7 The 2022 EPA Guidelines highlight that the term “human health” was used in the Strategic Environmental Assessment (SEA) Directive (2001/42/EC). The Commission’s SEA Implementation Guidance states at paragraph 5.26:

‘The notion of human health should be considered in the context of the other issues mentioned in paragraph (f¹) and thus environmentally related health issues such as exposure to traffic noise or air pollutants are obvious aspects to study.

- 5.8 The 2002 EPA EIS Guidelines similarly advised that health be considered through assessment of the environmental pathways through which it could be affected, such as air, water or soil, namely:

‘The evaluation of effects on these pathways (air, water, soil, etc) is carried out by reference to accepted standards (usually international) of safety in dose, exposure or risk. These standards are in turn based upon medical and scientific investigation of the direct effects on health of the individual substance, effect or risk. This practice of reliance upon limits, doses and thresholds for environmental pathways, such as air, water or soil, provides robust and reliable health protectors [protection criteria] for analysis relating to the environment.’ (EPA, 2002)

- 5.9 In accordance with this approach this chapter addresses population and human health in the context of other factors addressed elsewhere in further detail within the EIAR. The potential direct and indirect effects of the proposed development on population and human health as a consequence of key environmental factors are also considered in the following chapters:

Chapter 7: Land, Soils and Geology.

Chapter 8: Water

Chapter 10: Air Quality

Chapter 11: Noise and Vibration

Chapter 12 Landscape and Visual Impact Assessment

Chapter 13: Traffic.

Chapter 15: Material Assets.

- 5.10 In 2017, the Institute of Environmental Management and Assessment (IEMA) published the IEMA Primer. The IEMA document posits that human health spans environmental, social and economic aspects and does not merely represent an absence of disease. A broad understanding of human health is put forward, that should encompass factors such as local economy and community,

¹ (f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. Directive (2001/42/EC).

rather than relying on a narrower focus on health. In this regard, the current chapter seeks to address population and human health in a holistic manner, including consideration of economic factors, settlement patterns, landscape and visual impact, and land-use.

Assessment Methodology and Significance Criteria

- 5.11 The effects of the proposed development on the human environment are assessed in compliance with the EIAR Guidelines as outlined in Chapter 2 (EIA Report Methodology). The evaluation of effects on employment, human health and amenity comprises a qualitative assessment based on the quantitative and qualitative analysis of potential effects on the environment undertaken in other chapters of this EIAR. The assessment also takes into account a review of relevant literature and professional judgement in relation to impact on population and human health.

Study Area

- 5.12 The site is within the Municipal District of Kilkenny City, in the Kilkenny Local Electoral Area (LEA) and within Outrath Electoral Division (ED). The following Electoral Divisions (ED's) are within a 5km radius of the application site, these Electoral Divisions have been selected as the study area, unless stated otherwise in this chapter:

- | | |
|------------------|------------------|
| • Outrath | • Kells |
| • Dunbell | • Burnchurch |
| • Bennettsbridge | • Grange |
| • Danesfort | • Kilkenny Rural |
| • Ennisnag | • Clara |

Sources of Information

- 5.13 The desk-top study of the available data was undertaken to identify the populations of interest and characterise them in terms of their size, socio-economic status and existing health risks. The purpose was to build up a baseline understanding of the environmental and social issues and the characteristics of the communities affected. This information could then inform the assessment of proposed development to determine whether the existing conditions would be affected (positively or negatively) by the proposed development. The following sources of information informed the desk-top study.

- Spatial statistical data relating to the population within the study area has been obtained from the Central Statistics Office (CSO), including information from the 2016 and 2011 Census and associated data. Data was captured on an Electoral District (ED) basis. Where information is available from the 2022 Census, it has been utilised.
- Information on health profiles and health research have also been obtained from publicly available sources, including those produced by Lenus – *The Irish Health Repository* – a central source for open access health research in Ireland, the Health Service Executive (HSE) and the Institute of Public Health (IPH).

- Information on landuses and zoning were obtained using the Kilkenny City & County Development Plan 2021 – 2027, Myplan.ie, Ordnance Survey mapping, aerial photography, a site visit and drone surveys of the site.
- Additional information on tourist attractions and initiatives in the were obtained from the following sources:
 - Fáilte Ireland website – <https://www.failteireland.ie/>.
 - Walking trails <https://www.sportireland.ie/outdoors> and <http://trails.ie/index.php>
- Baseline data from the assessments of other Chapters in this EIAR as well as the design drawings for the proposed development, were also reviewed and informed the impact assessment.
- Site visits were also undertaken to appraise the location and potential impact upon human receptors by the proposed development.
- Information was also obtained from the following sources:
 - Environmental Protection Agency (www.epa.ie).
 - Geohive (<http://map.geohive.ie/mapviewer.html>).
 - Health and Safety Authority (<http://www.hsa.ie/eng/>).
 - Pobal (<https://maps.pobal.ie/WebApps/DeprivationIndices/index.html>).
 - All-Island Research Observatory (AIRO) (<https://airo.maynoothuniversity.ie/>).
 - <https://www.heritagemaps.ie/>.

Identification and Description of Potential Effects

- 5.14 The characteristics of the proposed development were considered and the changes occurring as a result of aspects of the construction and operation of the proposed development were identified. The effect of these impacts on population and health outcomes (beneficial and adverse) were consequently identified and assessed.
- 5.15 The assessment of the proposed development focused on those potential impacts most likely to be influenced by the proposed development, namely water, air quality and noise.
- 5.16 The population and human health assessment addresses effects at a community level rather than for individuals or identifiable properties, although impacts for individual properties are discussed where these are significant or located within proximity to the proposed development, as appropriate.
- 5.17 The criteria used to describe the predicted effects across land use, social and health considerations are adapted from Table 3.4 of the EPA Guidelines (EPA, 2022).

Table 5.1
Description of Effects

Description of Effects		
Quality of Effects	Positive Effects	A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/Adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Extent and Context of Effects	Extent	Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
	Context	Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Duration & Frequency	Momentary Effects	Effects lasting from seconds to minutes.
	Brief Effects	Effects lasting less than a day.
	Temporary Effects	Effects lasting less than a year.
	Short-term Effects	Effects lasting one to seven years.
	Medium-term Effects	Effects lasting seven to fifteen years.
	Long-term Effects	Effects lasting fifteen to sixty years.
	Permanent Effects	Effects lasting over sixty years.
	Reversible Effects	Effects that can be undone, for example through remediation or restoration.
	Frequency of Effects	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).
Direct/Indirect	Direct Effects	Effects that result directly from the proposed development or project.
	Indirect Effects	Defined by the EC as 'Impacts on the environment, which are not a direct result of the project, often produced away from (the site) or as a result of a complex pathway.'
Cumulative Effects	Cumulative Effects	The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects

Significance of Effects

5.18 The assessment process evaluates how the proposed development impacts on baseline environmental and social factors and considers whether the effects that are associated with

positive or negative population and health outcomes. The significance of an effect is informed by the description of the effects (table 5.1 above).

- 5.19 The significance of an effect can be described as follows (based on Table 3.4 of the EPA Guidelines (EPA, 2022)):

Table 5.2
Significance Criteria

Description of Significance of Effects		
Significance	Imperceptible	An effect capable of measurement but without significant consequences.
	Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects	An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.
	Very Significant	An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.
	Profound	An effect which obliterates sensitive characteristics.

Baseline Conditions

Land Use & Property

Land Use

- 5.20 Bennettsbridge Limestone is located in the townland of Kilree, Bennettsbridge, Co. Kilkenny, situated approximately 0.8km north-west of the village of Bennettsbridge and approximately 7km south of Kilkenny City. The site is approximately 32km south-west of Carlow town, 38km north of Waterford City and 44km east of Enniscorthy.
- 5.21 The existing quarry is located approximately 230m to the west of the R700, from which access is gained via an access road approved under 03/75. The L26322 is located immediately to the south of the existing quarry access road and both roads have a shared junction with the R700. The M9 motorway forms the southernmost boundary of both the existing quarry and the application site.
- 5.22 The application site (the site) comprises the existing quarry and a c. 24.5 Ha lateral extension to the west of existing limestone quarry.
- 5.23 The existing quarry extends to an area of c. 36.5 ha and comprises the following:
- Office building, weighbridge and wheelwash located near the entrance to the quarry.
 - Processing infrastructure (crushing, screening & lime plant).
 - Precast manufacturing facility, and associated ancillary works for the manufacturing of concrete products, batching of lime products.
 - General storage of products and plant.
 - Asphalt plant operated by Lagan Macadam (within the landholding)
 - Limestone extraction area
 - Existing quarry boundaries, mainly defined by fencing and screening berms.

- 5.24 The extension area is broadly rectangular in shape and presently comprises a mix of commercial forestry (6.8ha) and agricultural land, including land used for a mix of pasture and tillage farming. The site also includes two existing slatted sheds. The existing site boundaries are mainly defined by a mix of hedgerows, fencing and screening berms.
- 5.25 Beyond the site, the landscape is rural in character, consisting primarily of agricultural land interspersed with some areas of forestry. The main land use in the study area is agricultural, with dairy farming and tillage being the predominant sectors. Fields are typically medium to large and regularly shaped. Field boundaries are typically defined by hedgerows, however these may be gappy or replaced with post and wire fencing in places. Tree cover is typically associated with field boundaries, farm-steads, domestic properties and some small areas of commercial forestry.
- 5.26 There are two other operational quarries located within 5 km of the application site. P. Hennessy & Company Ltd. (Hennessy Concrete) operate a sand and gravel pit approximately 750m to the north-east of the site. Roadstone operate a dolomitic limestone quarry approximately 1.8km to the north-east.
- 5.27 Residences within the general area typically consist of one-off rural houses and ribbon development along the local road network. The nearest dwelling to the site comprises a detached house, approximately 329m to the north-west, beyond which are a number of additional dwellings. There are approximately 53 dwellings within 500m of the site. As stated above, Bennettsbridge is situated 1.5km south-east of the site.

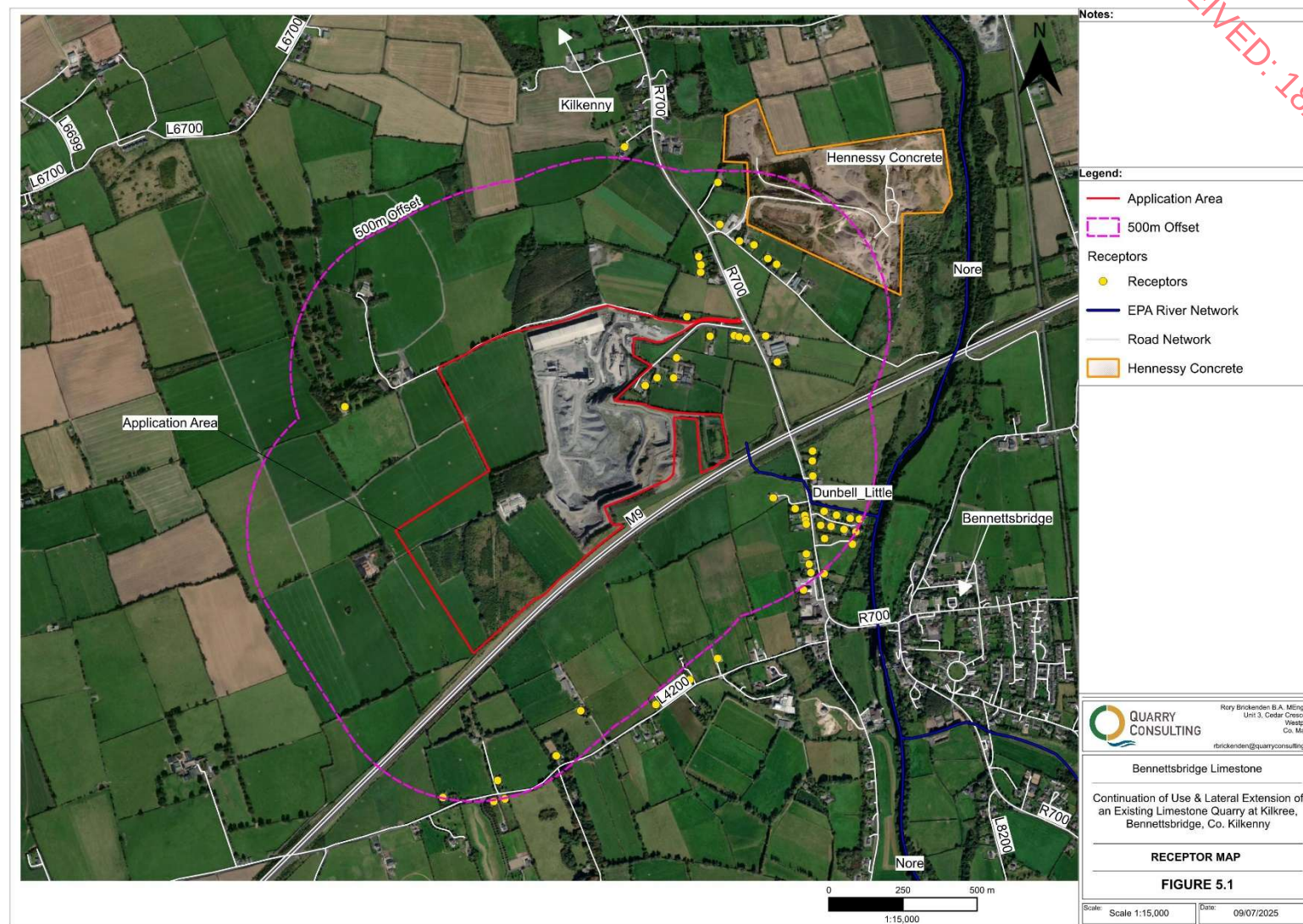


Figure 5.1: Local Receptors

Property Values

- 5.28 The Data available from the CSO on property values is presented in terms of Eircode Routing Key areas. The proposed development is located within Eircode Routing Key R95: Kilkenny. The CSO data for April 2025 shows that the median price of residential properties sold across the area was €341,750. The national median house price for April 2025 was €365,000.

Population and Settlement Patterns

- 5.29 The demographic information for the area has been sourced from the 2006 – 2022 census data, which is available from the Central Statistics Office. Table 5.3 below provides information on the population figures for the 10 Electoral Districts within the study area. The information largely paints a mixed picture, with some ED's experiencing significant growth (Burnchurch (32.26%) and Bennettsbridge (25.71%)), while others are either static or are experiencing decline (Out Rath (1.63%) and Ennisnag (-8.63%). These changes are incongruous with the county and national figures, which have experienced increases of 19.96% and 20.8% respectively.

Table 5.3
Population Statistics

Area	Population 2006	Population 2011	Population 2016	Population 2022	Change 2006-2022	% Change 2006-2020
Ireland	4,239,848	4,588,252	4,761,865	5,149,139	883,688	20.8%
Kilkenny	87558	95360	99232	104160	16602	18.96%
Out Rath	736	715	522	748	12	1.63%
Dunbell	518	524	689	534	16	3.09%
Bennettsbridge	914	1038	1098	1149	235	25.71%
Danesfort	491	467	470	473	-18	-3.67%
Ennisnag	568	537	518	519	-49	-8.63%
Kells	612	645	646	687	75	12.25%
Burnchurch	468	555	598	619	151	32.26%
Grange	810	834	868	891	81	10.00%
Kilkenny Rural	15272	16849	17876	18,475	3203	20.97%
Clara	613	619	657	719	106	17.29%

Source: <https://data.cso.ie/>

- 5.30 Information on population density for the area highlights that the population density in Out Rath ED is almost half of the national average, however the adjoining ED (Kilkenny Rural) is significantly above the national average. This highlights the fact that the area is relatively unpopulated, but has easy access to centres of population.

Table 5.4
Population Density

Area	Population Density 2022 (Persons/Km ²)
State	73
Out Rath	44
Dunbell	22
Bennettsbridge	61
Danesfort	31
Ennisnag	46
Kells	36
Burnchurch	43
Grange	47
Kilkenny Rural	462
Clara	35

- 5.31 The age profile of people living in the ED is slightly above the national average and may reflect the out-migration of young people from rural areas to cities. Information from Central Statistics office (2021) indicates that the birth rate of 9.8 for the county has decreased dramatically since 2006 when it was 13.4. This follows the same pattern as has been recorded nationally where the rate has fallen from 17 in 2011 to 10 in 2024.

Table 5.5
Age Profile

Area	Average Age
State	38.3
Out Rath	42.7
Dunbell	43.6
Bennettsbridge	40.3
Danesfort	41.4
Ennisnag	39.8

Kells	36
Burnchurch	38.1
Grange	40.6
Kilkenny Rural	37.7
Clara	40.7

Tourism and recreation

5.32 The National Tourism Development Authority (Fáilte Ireland) periodically collates statistics on overseas visitors to Ireland and regions within the country. Table 5.6 sets out the most recent overseas tourism statistics from the 2023 Regional Performance for the country and the South-East region, which includes County Kilkenny. The region attracted 2,536,000 overseas visitors generating a revenue of €665 million. Within that region, Kilkenny attracted 187,000 overseas visitor, 355,000 domestic visitors which together generated a revenue of €134 million.

Table 5.6
Tourism

Destination	No. of Tourists	Revenue Generated
Ireland (2023)	7.9 million	€5.95 billion
Ireland (2019)	9.7million	€5.6 billion
Ireland (2018)	9.6 million	€5.6 billion
South-East Region (2023)	2.54 million	€665 million

5.33 Data from the 2023 Fáilte Ireland *Key Tourism Facts*, indicates that there were 14.3 million domestic trips in 2018. The majority of these domestic trips were recorded as short (1-3 days) holiday trips with trips to visit friends/relatives reported at 25% of all domestic trips. Most of these trips are shown to occur in the late summer period (July – September) with the majority of domestic holidaymakers engaging in walking (54%).

5.34 *Key Tourism Facts* includes a table setting out “Attendance at Popular Visitor Attractions in Ireland 2023”, which includes Kilkenny Castle (452,383 visits) and Kilkenny Castle Parklands (869,953 visits).

5.35 Tourist and amenities in the study area include, but are not limited to:

- National Reptile Zoo (7.5km north of site).
- Tullaherin Round Tower and Monastic Site (4.5km south-east of application site).
- Mount Juliet Estate (Golf Course) – 5.5km south of the application site at its nearest point.
- Nore Valley Walk (0.95km east of the site at its nearest point).

- 5.36 As stated above, 54% of domestic visitors to the country engage in walking. The county has an extensive network of trails which provide a recreational resource for both visitors and locals. Kilkenny City is outside of the study area, however it is noted that the City has a number of recreational walks including the Castle Park and Lacken Walk and the Nore Valley Walk: Kilkenny to Bennettsbridge, which comprises one of three sections of the Nore Valley Walks, following the River Nore. The Nore Valley Walk is the flagship project of Trail Kilkenny. The walk stretches from Kilkenny city to Inistioge and follows the River Nore. The walk is divided into three sections:
- Kilkenny to Bennettsbridge.
 - Bennettsbridge to Thomastown.
 - Thomastown to Inistioge.
- 5.37 Bennettsbridge offers other recreational and community facilities and amenities including GAA clubs, shops, community hall and churches.
- 5.38 Public transportation in the area is relatively limited, however Bus Eireann operates bus service no. 882 from Kilkenny to Inistioge which runs along the R700 east of the site, with a stop in Bennettsbridge. Bus Eireann service no. 73 from Athlone to Waterford, also runs along the R700, with a stop in Bennettsbridge. Other bus services are available from Kilkenny City. An Irish Rail intercity line is situated approximately 1.5km east of the site, with services from Kilkenny to Waterford, the nearest train station is located in Kilkenny City.

Education & Employment

Education

- 5.39 The nearest national school in the vicinity site is Bennettsbridge Mixed National School, located approximately 960m south-east of the site. The nearest post-primary school is Presentation Secondary School, located in Kilkenny City, approximately 5km north-west of the site.
- 5.40 The nearest third level institution comprises the South East Technological University, with campuses in Waterford, Wexford and Carlow. Kildalton Agricultural and Horticultural College is located in Piltown, Co. Kilkenny and is the largest agricultural college in the country. The Design & Craft Council Ireland headquarters are located in Kilkenny City and offer a number of third level courses. A range of further education and training courses are also run in a number of Vocational Colleges throughout the county.

Employment

- 5.41 Employment is an important indicator of the economic standing of an area. The Labour Force Survey undertaken by the CSO provides details of unemployment on a regional level. Kilkenny is located in the South-East Region.
- 5.42 Table 5.7 illustrates the findings from the Labour Force Survey published by the CSO. The participation rate in the region is very slightly below the national rate, while the unemployment rate is above the national rate.

Table 5.7
Unemployment and Participation Rates

Location	Unemployment Rate Q1 2025	Participation Rate Q1 2025
State	4.3%	65.8%
South-East	5.2%	63.9%

Table 5.8
Sectors of Work in Outrath and Ireland

Sector	Outrath 2022		Ireland 2022	
	No.	%	No.	%
Agriculture, forestry and fishing	26	7.56%	82,228	3.54%
Building and construction	30	8.72%	134,482	5.80%
Manufacturing industries	37	10.76%	273,102	11.77%
Commerce and trade	87	25.29%	552,642	23.82%
Transport and communications	20	5.81%	212,383	9.15%
Public administration	15	4.36%	131,639	5.67%
Professional services	82	23.84%	568,105	24.48%
Other	47	13.66%	365,716	15.76%
Total	344	100.00%	2,320,297	100.00%

- 5.43 The population in the Outrath ED is categorised by sector of employment as per table 5.8. This shows that the majority of individuals are employed in either professional occupations or commerce and manufacturing. Building and Construction accounts for 8.7% of the workforce, which is above the national percentage of 5.8%.
- 5.44 A breakdown of the principal economic status for Outrath in comparison to that of the state is provided at Table 5.9. The statistics are broadly similar with a notable exception being the percentage of retired people being nearly 5% above the national average.

Table 5.9
Principal economic status in Outrath and Ireland

Status	Outrath 2022		Ireland	
	No.	%	No.	%
At Work	344	54.26%	2,320,297	56.09%
Looking for first regular job	1	0.16%	34,526	0.83%
Short term unemployed	15	2.37%	70,217	1.70%
Long term unemployed	11	1.74%	106,059	2.56%
Student	68	10.73%	459,275	11.10%
Looking after home/family	36	5.68%	272,318	6.58%

Retired	128	20.19%	657,790	15.90%
Unable to work due to permanent sickness or disability	28	4.42%	189,308	4.58%
Other economic status	3	0.47%	27,062	0.65%
Total Population aged 15 years and over	634	100.00%	4,136,852	100.00%

Health & Safety

- 5.45 Health data for individuals is confidential however information from Lenus has been used to establish the baseline health profile of the study area. Lenus has published separate health profiles for the Local Authorities areas in Ireland. The most recent County Health Profiles published date from 2015 and have been used to establish a community health profile for the County Kilkenny area in which the proposed development is situated.
- 5.46 Key health facts for County Kilkenny include:
- Has a low level of diversity in the population with 89% of the population being white Irish (National 84.5%).
 - Breast feeding rates are above average at 51.9% (National 46.6%).
 - Female cancer rates were below the national average except for colorectal cancer. Male prostate cancer rate was higher than the national average.
 - Rates of mortality for all causes and for the main causes of death are average or below average.
- 5.47 The 2022 census provides information on the percentage of the population that report their health as very good to very bad. Table 5.10 sets out those figures for the study area. These figures illustrate that the proportion of the population that reported very good health within the study area is typically above the state figure (state: 53.23% – Outrath: 62.69%). The proportion that reported very bad health ranges significantly across the study area from 0% in Danesfort to 0.6% in Bennettsbridge – in comparison to a state figure of 0.33%.

Table 5.10
General Health in the Study Area (percentage)

Area	Very Good	Good	Fair	Bad	Very Bad	Not stated
State	53.23%	29.66%	8.64%	1.41%	0.33%	6.74%
Outrath	62.69%	27.33%	4.92%	1.04%	0.39%	3.63%
Dunbell	56.24%	29.75%	7.87%	1.34%	0.19%	4.61%
Bennettsbridge	58.90%	30.27%	7.31%	1.20%	0.60%	1.72%
Danesfort	57.76%	30.60%	8.62%	1.08%	0.00%	1.94%

Ennisnag	62.83%	30.00%	4.72%	0.94%	0.19%	1.32%
Kells	61.67%	29.81%	5.58%	1.62%	0.15%	1.17%
Burnchurch	64.67%	23.99%	7.46%	0.97%	0.65%	2.27%
Grange	61.79%	25.69%	4.98%	0.44%	0.22%	6.87%
Kilkenny Rural	55.43%	30.08%	8.49%	1.30%	0.32%	4.37%
Clara	59.39%	25.53%	5.69%	1.19%	0.53%	7.67%

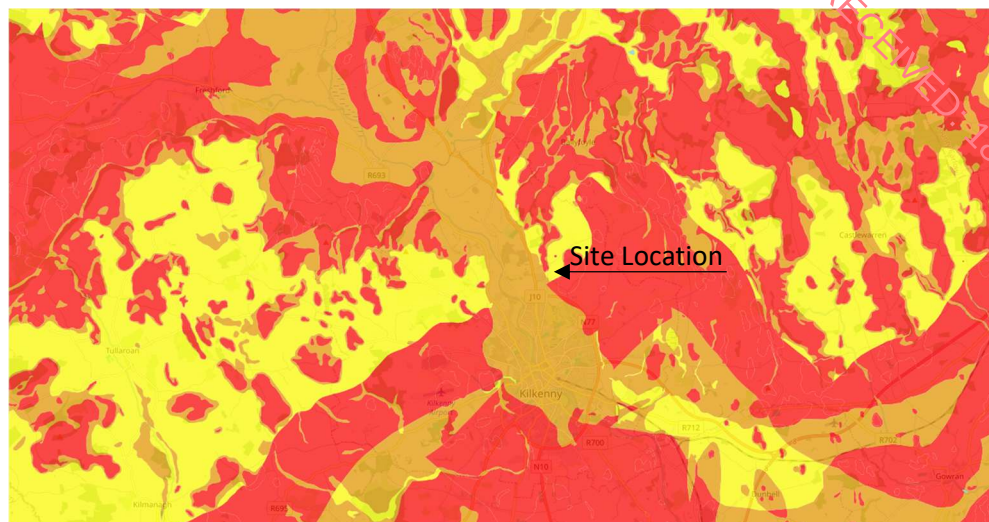
- 5.48 The 2022 census provides information on the age profile the population. Table 5.11 sets out the percentage of the population aged 65 and over in comparison to the state figures. The percentage of the population aged 65 and over within the study area is typically above the national figures with the exception of Burnchurch and Kilkenny Rural.

Table 5.11
Percentage of Population Over 65

Area	% of Population over 65
State	15.08%
Outrath	23.18%
Dunbell	26.29%
Bennettsbridge	19.43%
Danesfort	18.97%
Ennisnag	15.47%
Kells	13.95%
Burnchurch	15.07%
Grange	22.26%
Kilkenny Rural	14.40%
Clara	18.52%

- 5.49 The application site does not fall within a High Radon Area. Radioactivity from radon is measured in becquerels per cubic metre (Bq/m³). The reference level for radon in homes is 200 Bq/m³. In a High Radon Area more than 10% of homes may have more than the reference level of radioactivity. The acceptable level, or Reference Level, for workplaces in Ireland is 300 Bq/m³.

Figure 5.2: Radon Map



Assessment of Potential Effects

- 5.50 The proposed development comprises the continued extraction of limestone from an existing quarry and the extension of the existing extraction area into lands to the west of the site.
- 5.51 The following assessment considers the construction, operational and post-operational stages of the proposed development.
- 5.52 The construction phase is limited to considering the effects associated with the demolition of the existing slatted sheds within the extension area. In addition, the construction phase will consider the effects associated with soil removal within the proposed extension area as well as the felling of 6.81ha of commercial forestry.
- 5.53 The operational phase considers effects associated with excavation of limestone from the proposed extension area as well as the continuation of all existing activities within the red-line area.
- 5.54 The post-operational phase considers the effects associated with decommissioning the quarry and restoring it to natural habitat uses.

Land-use & Property

Construction Stage Impacts

- 5.55 The construction phase of the proposed development would change the existing land-use from agricultural/woodland to disturbed ground, with the removal of commercial woodland, the existing slatted sheds & farm yard and removal of soils. No construction compound will be needed, as personnel will utilise existing facilities within the Quarry, including the carpark, canteen, and welfare facilities.

Land-use	Quality	Negative
	Extent	6.81 Ha of woodland. Two slatted sheds removed. Top soil cleared from 18.2 ha.
	Probability	Likely
	Frequency	Constant
	Duration	Short-term
	Reversibility	Reversible
	Direct/Indirect	Two slatted sheds and three agricultural fields directly affected.
	Significance	Slight Effects: <i>An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</i>

Table 5.12: EPA Description of Effects – Land-use, construction phase

Operational Stage Impacts

- 5.56 The proposed development would not significantly alter the existing land use of the site as the entire site is presently either part of the existing extraction area or visually associated with it. The lands to the west which are presently utilised for agricultural purposes including two slatted sheds and three agricultural fields used for a mix of pasture and tillage farming and 6.8ha of woodland, would be directly affected by the proposed development and incorporated into the extraction area. In visual impact terms, Chapter 12 assesses the effect as no greater than Moderate to the west and north, Moderate-slight to the east and south, with the remainder of the 3km radius LVIA study area likely to experience Slight or Imperceptible landscape impacts.

Lan	Quality	Negative
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	Extent	Two slatted sheds removed. Top soil cleared from 18.2 ha. Activities at existing quarry site have an extended duration.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	Two slatted sheds, three agricultural fields and existing quarry area directly affected.
	Significance	Slight Effects: An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. The proposed development would change the nature of the land-use, however this is consistent with the existing uses of the site.

Table 5.13: EPA Description of Effects – Land-use, operational phase

Post - Operational Stage Impacts

- 5.57 The post operational phase comprises the restoration of the application site. The restoration proposals seek to create a lake from the quarry void, with additional woodland/scrub planting along the site boundaries.

Land-use	Quality	Positive
	Extent	Total application site area 61ha.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	Total site area 61ha directly affected.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences. The use of the land would be altered, however it would remain as a post-quarried use and allowed to vegetate and the void to fill with water. This would offer significant biodiversity net gain.</i>

Table 5.14: EPA Description of Effects – Land-use, post-operational phase

Population & Settlement Patterns

Construction Stage Impacts

- 5.58 The construction phase of proposed development is not predicted to have any negative effects on local property values as the area has a long association with extraction which provides a valuable source of direct and in-direct employment in the area, with additional trickle down benefits for the local economy.
- 5.59 Screening is primarily provided by landform. In this instance, vegetative screening is secondary to the limited visibility allowed by the surrounding terrain. Where vegetative screening obscures views of the development, the level of visual effect and mitigation is deemed to be comparable in winter vegetation or full leaf due to the density of vegetation across the study area, particularly across layered field boundaries and the Nore River Corridor.
- 5.60 Chapters 10 and 11 provide additional information in respect of the potential effects on Air and Noise, which have the potential to undermine the residential amenity of neighbouring properties

which could in turn affect property values. These chapters indicated that the associated effects of the proposed development would not be significant.

- 5.61 During the construction phase there is very limited potential for impacts on the residential amenity of the local population. The overall effect is considered to be “not significant” due in part to the short-term duration of the construction, and the relatively small size of the area affected. The effects would be primarily relating to noise, dust and traffic, however these are not anticipated to be above significantly baseline levels and therefore not significant.

Population	Quality	Negative
	Extent	Two slatted sheds removed. Top soil cleared from three agricultural fields and 6.8ha of felled woodland. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Probability	Likely
	Frequency	Constant
	Duration	Short-term
	Reversibility	Reversible
	Direct/Indirect	No direct effect on population and settlement patterns. Use is consistent with adjoining established uses at the site. Indirect affects associated with noise, vibration and dust are consistent with existing uses and although may extend beyond site boundaries, are unlikely to significantly increase baseline levels. No additional traffic movements associated with site preparation or removal of slatted sheds.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i> The construction phase activities would not significantly alter the nature or extent of emissions from the application site above baseline levels.

Table 5.15: EPA Description of Effects – population - construction phase

Operational Stage Impacts

- 5.62 The continued operation and extension of the quarry would not have any affect on the distribution of population within the study area as it does not include a housing element and the number of individuals employed would not be altered.
- 5.63 Key pathways for potential effects on residential amenity in this instance are air, traffic and noise & vibration. As with potential effects on human health, these pathways (other than traffic) are controlled by thresholds established by planning conditions and continuously monitored at the site. These pathways have also been assessed in the respective chapters of this EIA and it has been determined that there would be no significant magnitude of change associated with the continuation of and extension to the existing quarry. The combined effect of these potential effects on amenity is therefore anticipated to be negligible. Given that human beings are considered to be a high sensitivity receptor, it is determined that the overall effect would be “not significant”.
- 5.64 The Traffic & Transport Assessment (EIAR Chapter 13) finds that, even with the additional quarry trucks, both the R700 and the short access road will continue to operate well within their available carrying capacity. Consequently, the residual impact on road performance is classified as slight, provided the wheel-cleaning, traffic-management and periodic pavement-monitoring measures recommended in the report are implemented.

- 5.65 There are no proposals to increase the number of employees and hence all staff parking shall continue to be accommodated within the quarry site.
- 5.66 In visual impact terms, Chapter 12 assesses the effect as no greater than Moderate to the west and north, Moderate-slight to the east and south, with the remainder of the 3km radius LVIA study area likely to experience Slight or Imperceptible landscape impacts.
- 5.67 Chapters 10 and 11 provide additional information in respect of the potential effects on Air and Noise, which have the potential to undermine the residential amenity of neighbouring properties which could in turn affect property values. These chapters indicated that the associated effects of the proposed extension would not be significant.

Population	Quality	Negative
	Extent	Total application site area 61ha directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network.
	Probability	Likely
	Frequency	Daily – traffic, noise & atmospheric emissions. Vibration one / two days per month
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	No direct effect on population and settlement patterns. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i> Changes would not be significantly above the baseline levels. The nature or extent of emissions from the application site would not be significantly altered above baseline levels.

Table 5.16: EPA Description of Effects – Population -operational phase

Post - Operational Stage Impacts

- 5.68 As stated above, the post operational phase comprises the restoration of the application site. The restoration proposals offer the potential for biodiversity gain. The effect on property would however be neutral as the changes would not be perceptible compared to the baseline.
- 5.69 Following restoration, the potential effects on air, noise, and traffic would cease owing to the cessation of extraction including the cessation of machinery operation and the returning of the site to agricultural land and natural uses. Following the cessation of the proposed works, the appearance of the application site will have been altered with a return of the landscape to the pre-extracted agricultural and natural uses.

Population	Quality	Positive
	Extent	Total application site area 61ha directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network.
	Probability	Likely
	Frequency	Daily – traffic, noise & atmospheric emissions. Vibration: one / two days per month

	Duration	Short-term
	Reversibility	Reversible
	Direct/Indirect	61ha application site area directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences</i>

Table 5.17: EPA Description of Effects – Population, post-operational phase

Tourism & Recreation

Construction Stage Impacts

5.70 It is not anticipated that the construction phase would have any effect on tourist resources identified above. The site is distant from the majority of those resources and the site, including the woodland, is in private ownership and not used for recreational purposes. The site is not visible from any existing recreational resources and noise associated with the proposed development would not be heard from these any recreational facilities or tourist attractions.

Tourism & Recreation	Quality	Negative
	Extent	Total application site area 61ha directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Probability	Likely
	Frequency	Daily – Noise & atmospheric emissions.
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	Total 61ha application area directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Significance	Not significant - an effect which causes noticeable changes in the character of the environment but without significant consequences.

Table 5.18: EPA Description of Effects – Tourism & Recreation, construction phase

Operational Stage Impacts

5.71 The operational phase proposed development is not predicted to have any negative effect on tourist or recreational facilities and amenities identified above as the site is distant from the majority of those resources and the site itself is in private ownership and not used for recreational purposes. The site is not visible from any existing recreational resources and noise associated with the proposed development would not be heard from these any recreational facilities or tourist attractions.

Tourism & Recreation	Quality	Negative
	Extent	Total 61ha application area directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.
	Probability	Likely
	Frequency	Daily – traffic, noise & atmospheric emissions. vibration: one / two days per month
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	Total 61ha application area directly affected. Potential effects on noise and atmosphere may extend beyond site boundaries.

Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i>
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Table 5.19: EPA Description of Effects – Tourism & Recreation, operational phase

Post - Operational Stage Impacts

- 5.72 Restoration of the site would similarly not have any negative effects on recreational facilities and amenities identified above as the site is distant from the majority of those resources and the site itself is in private ownership and not used for recreational purposes.
- 5.73 The effects of the proposed development would be long-term due to the design life of the proposed development, however the quarrying activity is a long established land use in the area and has not impacted on the recreational amenity of the study area.

Tourism & Recreation	Quality	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible - An effect capable of measurement but without significant consequences.

Table 5.20: EPA Description of Effects – Tourism & Recreation, post-operational phase

Education & Employment

Construction Stage Impacts

- 5.74 The construction phase would not require any additional employees than are currently employed on site as existing employees will be re-deployed to this area of the site for the short-term duration of the construction works.

Employment	Quality	Positive
	Extent	25 people's employment sustained by the proposed development.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	25 people's direct employment sustained by the proposed development.
	Significance	Imperceptible - An effect capable of measurement but without significant consequences.

Table 5.21: EPA Description of Effects – Education & Employment, construction phase

Operational Stage Impacts

- 5.75 The proposed development will continue to provide employment for up to 25 people directly on-site, in addition to a number of indirect employees including hauliers, sub-contractors, materials suppliers and maintenance contractors. In addition, the proposed development will contribute indirectly to sustaining and developing the local and regional economy through the supply of

construction aggregates. This will have greater significance in this area relative to other parts of the country given the relative importance of the construction sector in this area.

Employment	Quality	Positive
	Extent	25 people's employment sustained by the proposed development.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	25 people's direct employment sustained by the proposed development.
	Significance	Imperceptible - An effect capable of measurement but without significant consequences.

Table 5.22: EPA Description of Effects – Education & Employment, operational phase

Post - Operational Stage Impacts

- 5.76 Following the cessation of operations, the application site will be restored. This would result in the loss of jobs within the quarry and related operations. Some short-term employment would be provided in relation to the aftercare of the restored site.

Employment	Quality	Negative
	Extent	25 people's employment lost following cessation of operations.
	Probability	Likely
	Frequency	Constant
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	Direct & indirect
	Significance	Slight - An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.

Table 5.23: EPA Description of Effects – Education & Employment, post-operational phase

Human Health

Construction Stage Impacts

- 5.77 The construction phase would result in a short term generation of noise and dust associated with the construction activities. The levels of noise and dust generated would however not be significant as the duration of the construction phase would be short term and the activities would be consistent with the existing activities occurring on the site with measures already in place to manage emissions.

Health & Safety	Quality	Negative
	Extent	25 people employed on site. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network.
	Probability	Likely
	Frequency	Daily – traffic, noise & atmospheric emissions – during operating hours.
	Duration	Short-term
	Reversibility	Reversible

Direct/Indirect	Direct effects related to health & safety issues – all employees are required to hold a safe pass certificate to operate at the site. The workforce is a skilled workforce. Indirect effects associated with occupational exposure to dust & noise mitigated by operating procedures at the site, including Personal Protective Equipment.
Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i> The construction phase would not significantly alter the nature or extent of emissions from the application site above baseline levels.

Table 5.24: EPA Description of Effects – Health & Safety, construction phase

Operational Stage Impacts

5.78 The operational phase of the development relates to the continued extraction and processing of limestone within the quarry area using conventional methods and the extension of that quarry. The key pathways for potential effects on human health in this instance are therefore air, noise, water and soil. Baseline information and predictions of future emissions in relation the key pathways associated with the day to day operations of the existing and proposed development have been used as part of the assessment. These can be compared to various thresholds relevant to each element. The threshold is the level below which no detrimental health effects are expected.

5.79 Thresholds for the existing development are established via conditions attached to the existing planning permission and the subsequent applications that have been approved for the site:

85/419: *Granted on 16th January 1987 for extraction of rock within a 3.5ha site area over a 10 year period.*

433/89: *Provided for the retention of office accommodation – namely offices, canteen facilities, staff washrooms and associated septic tank.*

99/1161: *Granted in March 2001 for retention and proposed 30.8ha extension and additional site infrastructure comprising a wheel-wash; landscaped berms and boundary treatment; lime and asphalt plants; and crushing plant on the floor of the quarry.*

ABP Reference 10/120270: *Following a third party appeal on 99/1161, An Bord Pleanála upheld the decision of Kilkenny County Council and granted permission to 31st December 2018*

01/726 and 04/129: *modified the opening hours of the Irish Asphalt facility permitted under Kilkenny County Council Reg. Ref. 99/1161; ABP Reference 120270;*

03/75: *Permission granted for the development of a pre-cast concrete manufacturing facility (production building, casting machine, batching plant, and associated works). The development included a new access road, separating residential and quarry traffic, and associated embankments, landscaping and planting.*

03/1532: *Permission granted for amendments and alterations to 03/75 precast concrete manufacturing facility, including an extension to the production building and new adjacent building for concrete storage and curing.*

04/1806: *Permission granted for the creation of a new stockyard for the storage of precast concrete products, involving semi-hardcore covering approx. 4.75ha and the use of a mobile crane (13m tall), along with associated site works and landscaping. This permission was not acted upon and has ceased to have effect in 2009.*

05/127: *Permission granted for retention of a landscaped screening mound adjacent to the quarry lagoon in a different location to that previously approved under Reg. Ref. 99/1161 (ABP P10.120270), and retention of constructed mound, concrete pathway and mechanical equipment installed on the eastern boundary.*

An Bord Pleanála Ref. SU10. SU0122:

Substitute consent was granted for an area of approximately 9.5Ha.

17/316: *Permitted the continuation of quarrying and extraction of rock.*

18/150: *Permitted Lagan Macadam to operate an asphalt plant at the quarry.*

18/858: *Permission granted for a total area of 36.5 Hectares comprising of the following: Deepening of 13.4 hectares which was previously subject to rock extraction down to 12mOD; Removal of overburden, construction of screening berms and extraction of rock down to 30mOD from a greenfield area consisting of 8.5 hectares; Continuation of use of 11.6 hectares consisting of processing infrastructure (crushing, screening & lime plant), offices, workshop, canteens and toilet facilities, weighbridges, wheelwash facilities, fuel storage area and switch room, settlement lagoons, entrance, haul roads, ESB sub-station and all other ancillary facilities; Continuation of use of existing pre-cast manufacturing facility and associated ancillary works for manufacturing of concrete products, batching of lime products and general storage of products and plant on an area of 3.0 hectares; Landscaping and restoration of the site and all associated ancillary facilities/works. Granted 11/06/2019 for a period of 20 years.*

5.80 The potential effects of continuing the existing quarry on land, soils & geology, water, air quality and noise and vibration are set out in chapters 7, 8, 10 and 11 respectively. In addition, each of those potential pathways are monitored at the site and the results are submitted to Kilkenny County Council periodically. The site has consistently demonstrated compliance with planning conditions.

Health & Safety	Quality	Negative
	Extent	25 people employed on site. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network.
	Probability	Likely
	Frequency	Frequently – traffic, noise & atmospheric emissions. vibration: one / two days per month
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	25 people employed on site. Potential effects on noise and atmosphere may extend beyond site boundaries. Traffic effects would affect the site access and local road network. Direct effects related to health & safety issues – all employees are required to hold a safe pass certificate to operate at the site. The workforce is a skilled workforce. Indirect effects associated with occupational exposure to dust & noise mitigated by operating procedures at the site, including Personal Protective Equipment
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i>

Table 5.25: EPA Description of Effects – Health & Safety, operational phase

Radon gas

5.81 The application site does not fall within a High Radon Area. Statutory Instrument No.30 (2019) requires employers located in High Radon Areas to test their premises for radon. The acceptable level, or Reference Level, for workplaces in Ireland is 300 Bq/m³. The EPA protocol for testing workplaces states:

- A workplace is tested by placing one small detector in each occupied room on the ground floor and in the basement.
- Only rooms where a worker spends more than 100 hours per year need to be tested.
- No need to test bathrooms, corridors, storage areas etc.

5.82 The proposed development does not include any internal spaces and the quarry itself is open-cast. Francisa et al (2023) investigated radon concentration in open cast mining work environments and concluded that *"in outdoor workplaces, radon can be considered a low risk to employees' health. The average exposure to radon gas, even in cases where exposure to mineral dust is continuous, did not exceed unsafe values considered by international standards during the measurements"*.

5.83 The potential effects on the health of employees working at the site as a result of radon emissions is therefore likely to be not significant.

Radon Gas	Quality	Negative
	Extent	25 employees directly affected.
	Probability	Unlikely
	Frequency	Rarely – due to nature of the outside working space at the site and to location of site outside a high radon area.
	Duration	Long-term
	Reversibility	Irreversible
	Direct/Indirect	25 employees directly affected.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i>

Table 5.26: EPA Description of Effects – Radon gas, operational phase

Silica Dust

5.84 When rocks containing crystalline silica are cut, crushed, ground, drilled or used in similar industrial processes, dust particles are produced. Some of these particles are very fine – known as respirable crystalline silica or RCS. If high quantities of this very fine RCS dust are inhaled on a regular basis over many years, there is a potential risk that the cumulative effects can cause a lung disease known as silicosis. It is now also accepted that prolonged and intense RCS exposure can cause lung cancer.

5.85 Material that is extracted at the application site comprises Limestone rock, which is then used as aggregates for concrete, blocks, hardcore, farm drainage, earthworks and fill, with the majority of materials produced being used in roadbuilding and in the construction sector. The typical crystalline silica content of Limestone is less than 5%, as calcium carbonate is the primary chemical compound in the rock and not silica.

5.86 The quarry operator has a legal responsibility to adhere to the HSA Safe Quarry Guidelines to Section 26(b)(ii) of the Safety Health and Welfare at Work (Quarries) Regulations 2008 and the

EU Directive on Carcinogens and Mutagens in the Workplace - 2017/2398/EC. This latter legalisation sets an occupational exposure limit of 100 µg/m³ RCS in industrial workplaces.

- 5.87 Effective dust prevention, protection and control techniques are already in place at the site, including wheel-washing, dust suppression, enclosure of conveyors, buildings used to store aggregate where necessary, and requirements for PPE. The potential effects on the health of employees working at the site as a result of silica dust is therefore likely to be not significant.
- 5.88 RCS disperses very rapidly (within 1-10m of origin) and therefore concentrations return to background or near background levels very quickly. As a consequence RCS is only a risk to people working directly at the source and without proper PPE and dust management techniques. RCS does not therefore present a risk to the health of the sensitive receptors in the vicinity of the application site.

Silica Dust	Quality	Negative
	Extent	25 employees directly affected.
	Probability	Unlikely
	Frequency	Rarely – due to nature of the dust (low silica content)
	Duration	Long-term
	Reversibility	Irreversible
	Direct/Indirect	25 employees directly affected.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i>

Table 5.27: EPA Description of Effects – Silica Dust, operational phase

Unplanned Events

- 5.89 According to the EPA guidelines, unplanned events, such as accidents, can include “spill from traffic accidents, floods or land-slides affecting the site, fire, collapse or equipment failure on the site”. The 2014 EIA directive refers to “major accidents, and/or natural disasters (such as flooding, sea level rise, or earthquakes)”.
- 5.90 In this instance, the vulnerability of the proposed development to accidents, unplanned events or natural disasters is relatively limited owing to the relatively simple nature of the development works, the established nature of the techniques, regulations and procedures to be followed, the material to be handled on site and the relatively rural location of the proposed works.
- 5.91 Unplanned events in relation to the proposed development could potentially relate to:
- instability following the extraction of limestone;
 - spill from traffic accidents;
 - flooding.
- 5.92 Adhering to the HSA Safe Quarry Guidelines to the Safety Health and Welfare at Work (Quarries) Regulations 2008 should limit the potential for unplanned events in the form of instability in the pit faces. In any event, instability following the extraction of limestone would be unlikely to have any significant impacts on human health beyond the site as there is no public access to the quarry. Therefore, following implementation of the CEMP the overall effects are expected to be imperceptible on health and safety in terms of the EIA Regulations
- 5.93 Chapter 7 (Land Soil and Geology) and Chapter 8 (Water) note that accidental spillages or leaks of fuels or chemicals during site activities could happen without proper control and supervision. Given the history of the quarry operations, there has been no previous oil or fuel spills with the

current fuel storage and refuelling practises in place. Given the scale of the operation and the current practises in place, the probability of spillages occurring is very low.

- 5.94 The traffic and transport assessment, carried out as part of the EIAR (Chapter 13), indicates that existing road network can continue to accommodate the proposed development. It is considered that the risk of an accident resulting in a spillage from development traffic would be no greater in relation to this development than it is for any other form of development that relies on the transportation of goods and materials by HGVs. The potential for significant impacts on employment, human health in the wider population or amenity as a result of a road spillage is likely to be low and any such effects would be temporary.
- 5.95 Clearance of 6.81 ha commercial plantation will be undertaken under a Forestry Felling Licence issued by the Department of Agriculture, Food and the Marine. Felling operations will be carried out in compliance with best practice and any potential effects (noise, dust, traffic or run-off) will be contained within the site. Compensatory planting (refer to EIAR Chapter 6: Biodiversity) will begin progressively as berms are formed, while the full replacement woodland required under the Felling Licence will be planted once the commercial crop has been cleared; taken together, these measures ensure a net increase in woodland as a result of the development.
- 5.96 On this basis, it is considered that there would be no likely significant temporary or permanent effects on human health during the operational stage.

Unplanned Events	Quality	Negative
	Extent	25 employees. Traffic effects would affect the site access and local road network.
	Probability	Unlikely
	Frequency	Rarely – due to existing procedures in place.
	Duration	Long-term
	Reversibility	Reversible
	Direct/Indirect	25 employees directly affected. Traffic effects would affect the site access and local road network.
	Significance	Not significant - <i>an effect which causes noticeable changes in the character of the environment but without significant consequences.</i>

Table 5.28: EPA Description of Effects – Unplanned events, operational phase

Post - Operational Stage Impacts

- 5.97 Following restoration, the potential effects on human health associated with emissions from the site would cease and the site would be restored. Following restoration, the site would remain in private ownership and existing security fencing would be maintained to prevent accidental or deliberate access to the site. The restoration of the site would not have any effect on human health, including silica dust, radon gas and unplanned events.

Health & Safety	Quality	Neutral
	Extent	No effect
	Probability	Unlikely
	Frequency	No effect
	Duration	No effect
	Reversibility	No effect
	Direct/Indirect	No effect
	Significance	Imperceptible

Table 5.29: EPA Description of Effects – Health & Safety, post-operational phase

Cumulative Effects / Synergistic Effects

5.98 In the assessment of cumulative effects other permitted and proposed developments in the surrounding area have been considered where they have the potential to generate cumulative effects with the proposed development. Developments that were already constructed have been excluded as these are already assessed as part of the baseline. Also excluded were small scale developments that would not have the potential to cause cumulative effects. The following developments were short-listed as having the potential to result in cumulative effects:

- 21508: P Hennessy and Co Ltd, Sheastown, Bennettsbridge, Co. Kilkenny: the development consists of a total area of 15.7 Hectares comprising of the following: Continuation of use of the existing pit consisting of 6.8 Ha. as previously granted planning permission under P04/136, P10/601 and P12/604; Extension of the pit into an adjoining greenfield area consisting of 8.9 Ha. which will be subject to extraction and occasional processing of material: Continuation of use of the existing processing infrastructure (crushing, screening and washing plant), concrete batching plants, garage, workshop, fuel storage shed, wheelwash, office/laboratory and all other ancillary facilities; Landscaping and restoration of the site including construction of berms and all associated ancillary facilities/works; The applicant is seeking a 25 year permission as part of the planning application. The application is accompanied by an Environmental Impact Assessment Report and a Natura Impact Statement.: Granted Conditional 07/12/2021
- 2560187: Rohan Dairies Ltd. Kilree, Sheastown, Co. Kilkenny, R95XTK2: construction of 2 no. agricultural sheds consisting of cubicles, feeding area and underground slatted slurry storage tanks and construction of 2 no. silage pits and all associated site works: Further information received 16/07/2025.

Land Use & Property

5.99 There are no potential cumulative effects of the proposed development with other developments on property. The ownership of the above developments would not be affected by the proposed development.

Population and Settlement Patterns

5.100 There are no additional cumulative effects of the proposed development with other developments on property. The ownership of each of the above respective developments would not be affected by the proposed development.

Tourism & Recreation

5.101 No significant adverse cumulative effects on recreation and amenity are anticipated due to the operation of the above developments as it comprises an existing operation.

Education & Employment

5.102 No significant adverse cumulative effects education & employment are anticipated due to the construction or operation of the above developments. The development identified has the potential to make a contribution towards employment in the area.

Health & Safety

5.103 No significant adverse cumulative effects on health & safety are anticipated due to the construction or operation of the above developments.

Do Nothing Scenario

5.104 Under the 'do-nothing' scenario, the existing quarry would continue to operate the quarry as permitted under 18/858.

5.105 In the short-term period, there would be no change in the operations at the site and consequently no changes in emissions to soil, water, air or noise and vibration. In the medium term the quarry would be forced to close and there would be a reduction in emissions associated with the operation of the quarry, which would correspondingly result in a reduction in any potential effects on human receptors.

5.106 However the opportunities for local employment and the associated revenue within the local economy would not be realised. Furthermore, there would be a reduction in the volume of material available to the construction sector locally.

5.107 The application site is situated in a part of County Kilkenny that is relatively free from constraints such as nature conservation designations, in addition it is located relatively near to a number of urban centres and sources of demand. The do-nothing scenario could result in pressure for alternative, less suitable locations being proposed for quarries to address this short-fall in supply.

Transboundary Impacts

5.108 It is not anticipated that the impacts of the proposed development would have any significant transboundary effects on population and human health.

Interaction with Other Impacts

5.109 It is not anticipated that the effects of the proposed development on population and human health would interact significantly with other impacts. This chapter has made reference to other chapters within this EIAR including Chapter 10 Air Quality, Chapter 11 Noise, Chapter 13 Traffic. Reference should also be made to Chapter 16: Interactions.

Mitigation Measures

Construction & Operational Stage Impacts

5.110 Reference should be made to the following chapters of this EIAR for detailed mitigation measures to address the potential pathways for effects on population and human health.

Chapter 7: Land, Soils and Geology.

Chapter 8: Water.

Chapter 9: Climate.

Chapter 10: Air Quality.

Chapter 11: Noise.

Chapter 12: Landscape.

Chapter 13: Traffic.

Chapter 15: Material Assets.

5.111 The following additional mitigation measures are proposed:

Radon

- Periodic workplace testing will be undertaken in accordance with the guidelines set out in the Protocol for Measurement of Radon in Homes & Workplaces, EPA, 2019.

Silica Dust

- Existing health and safety policies and procedures will continue to be reviewed and updated to ensure it is in keeping with best practice and current legislation.

Unplanned Events

- Existing emergency procedures will continue to be reviewed and updated to ensure it is in keeping with best practice and current legislation.

Post - Operational Stage Impacts

5.112 The majority of effects of the proposed development will diminish or cease following the cessation of operations. No specific mitigation measures are proposed in relation to the post operational phase.

Residual Impact Assessment

Construction Stage Impacts

5.113 Following the implementation of mitigation measures identified above and in other chapters of this report, no residual impacts on population and human health are anticipated in the construction phase of the development.

Operational Stage Impacts

5.114 Following the implementation of mitigation measures identified above and in other chapters of this report, no residual impacts on population and human health are anticipated in the operational phase of the development.

Post-Operational Stage Impacts

5.115 Following the implementation of mitigation measures identified above and in other chapters of this report, no residual impacts on population and human health are anticipated in the post-operational phase of the development.

Monitoring

5.116 As outlined in 8 (water), 10 (air quality) and chapter 11 (noise), of this EIAR monitoring in relation to the proposed development will be undertaken in respect of water, air and noise and vibration. On this basis, no specific monitoring is required in relation to population and human health.

Environmental Monitoring Programme

5.117 Monitoring will continue to be carried out on a regular basis, to demonstrate that the development is not having an adverse impact on the surrounding environment.

Dust Monitoring

5.118 Dust deposition monitoring will be carried out at the application site – refer to Chapter 10. Dust monitoring locations shall be reviewed and revised where necessary. The results of the dust monitoring will continue to be submitted to Kilkenny County Council on a regular basis for review and record purposes.

Noise & Vibration Monitoring

5.119 Noise and vibration monitoring will continue to be carried out at the application site – refer to EIAR Chapter 11. Noise and vibration monitoring locations shall be reviewed and revised where necessary. The results of the noise monitoring will continue to be submitted to Kilkenny County Council on a regular basis for review and record purposes.

Water Monitoring

5.120 The site will continue to operate an Environmental Management System (EMS), which will include surface water and groundwater sampling.

5.121 Monitoring measures will continue as usual and they verify whether the development is impacting on the hydrological and/or hydrogeological, and that the mitigation measures are effective.

Difficulties Encountered

5.122 No significant difficulties were encountered.

References

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