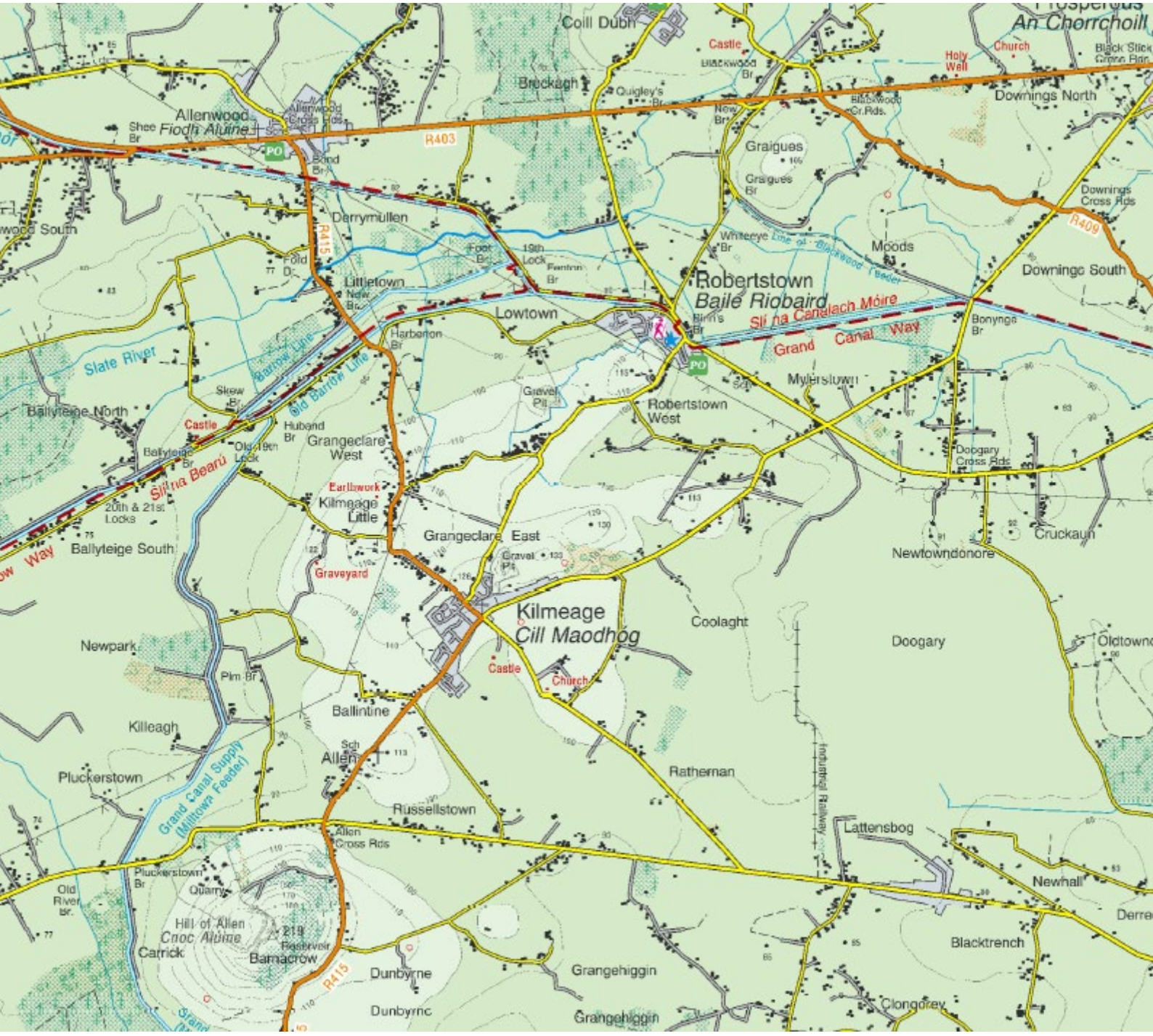
CHAPTER 5

POPULATION AND HUMAN HEALTH



QUARRY CONSULTING

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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 Joseph Logan. The lead consultant for the study was Peter Kinghan (Chartered Mineral Surveyor), Post Graduate Diploma in Environmental Engineering.

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 (f*[1]*) 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, 2022)

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

[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).

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).

Study Area

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

- Rathernan
- Kilmeague North
- Robertstown
- Oldconnell
- Carragh
- Donore

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 Kildare County Development Plan 2022 – 2028, Myplan.ie, Ordnance Survey mapping, aerial photography 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/).

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 and 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 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 are 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 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 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 The site to which the planning application relates is located in the townland of townland of Coolaght, Co. Kildare. The quarry site is located approximately 900m northeast of centre of Kilmeague, 8.8km north of Newbridge and 11km northwest of Naas (see Figure 5.1). Access to the site is provided off the L7081, which joins the R415 at Kilmeague.

5.21 Landuse in the vicinity of the site predominantly involves agriculture with interspersed forestry and one-off houses. There is a cutaway bog located to the southwest of the site and two extractive related industries located to the north and west. Field boundaries in the surrounding area are marked by treelines and hedgerows. Access to the proposed development site will be via an existing access onto the L7081 Local Road. Trucks will exit the site at the same entrance.

5.22 The proposed sand and gravel pit will be screened from views from surrounding lands as it is proposed to retain a 10 metre perimeter buffer of the existing woodland at the site.

5.23 The proposed sand and gravel pit site forms part of an active, working landscape, in which agriculture, forestry and extractive related development all form existing landuses. There are approximately 3 dwellings within 300m of the quarry (Figure 3.1), the closest being two dwellings located approx. 250m from the proposed extraction area. Several dwellings are situated along the L7081, three of which are located within 150m of the site entrance. Two dwellings are located approx. 400 m north of the extraction area. There are more dwellings located in the village of Kilmeague the centre of which is located approx. 1km from the proposed site.

Figure 5.1: Local Receptors

Property Values

5.24 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 W91: Naas. The CSO data for the year to December 2023 show that the median price of residential properties sold across the area is c.€400,000. The national median house price is €327,500.

Population and Settlement Patterns

5.25 The demographic information for the area has been sourced from the 2006 – 2022 census data, which is available from the Central Statistics Office. Table 3 below provides information on the population figures for the six Electoral Districts within the study area. The information largely paints a picture of an area experiencing population increase, with an overall increase of 28.2% in the population within the study area since 2006. This increase is similar to the county figure (32.7% increase) and higher than the national figures (20.8% increase).

Table 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	5,123,536	883,688	20.8%
Kildare County	186,380	210,312	222,504	247,413	61,033	32.7%
Carragh (061)	1,487	1,720	1,823	1,843	356	23.9%
Donore (063)	756	794	785	837	81	10.7%
Kilmeague North (074)	1,781	2,069	2,256	2,686	905	50.8%
Kilmeague South (075)	1,668	1,999	2,114	2,221	553	33.1%
Old Connell (081)	864	901	983	1,035	171	19.7%
Rathernan (084)	505	616	598	683	178	35.2%
Robertstown (086)	1,897	1,925	1,983	2,357	460	24.2%
Study Area	8,958	10,024	10,542	11662	2704	28.2%

Table 4
Population Density

Area	Population Density 2016 (Persons/Km²)
Carragh	142.9
Donore	39.4
Kilmeague North	102.3
Kilmeague South	122
Old Connell	56.3
Rathernan	34.8
Robertstown	144.7
Study Area	91.7

5.26 The age profile of people living in the area is similar to other parts of the state and reflects little out-migration playing a significant role in that trend (see table 5).

5.27 Similarly, information from Central Statistics office (2020) indicates that the birth rate of 12.7 for the county is higher than the national rate of 11.4 and represents a drop compared to the 2012 rate for the county which was 15.8.

Table 5
Age Profile

Area	Average Age (2016)
Kildare County	34.9
State	37.4
Carragh	32.5
Donore	36.3
Kilmeague North	35.0
Kilmeague South	32.9
Old Connell	37.3
Robertstown	36.6
Rathernan	36.6

Education & Employment

Education

5.28 The nearest national schools in the vicinity of the area are Allen National School and Robertstown National School located approx. 2.5 km and 1.5 km from the site, respectively. The three nearest post-primary schools are located in the towns of Prosperous and Newbridge. St Farnan's Post Primary School is situated in Prosperous and Holy Family Catholic Secondary School for Girls and Patrician Catholic Secondary School are situated in Newbridge.

5.29 The nearest third level campus is Maynooth University, located approximately 20km northeast of the proposed development site. The Institute of Technology Tallaght is located approx. 30.1 km west.

Employment

5.30 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. Kildare is located in the Eastern and Midland Region, which is a Nomenclature of Territorial Units for Statistics (NUTS) NUTS2 statistical region of Ireland.

5.31 Table 6 illustrates the findings from the Q4 2022 Labour Force Survey published by the CSO.

Table 6
Unemployment and Participation Rates

Location	Unemployment Rate Q4 2019	Participation Rate Q4 2019	Unemployment Rate Q4 2022	Participation Rate Q4 2022
State	4.5%	62.6%	4.2%	64.6%
Eastern and Midland	4.4%	64.8%	4.4%	66.9%

5.32 The first case of Covid-19 was reported in Ireland at the end of February 2020 and measures required in accordance with the public health guidance were introduced on 12 March 2020. Although Labour Force Survey statistics were affected during the pandemic period, the participation rate in Q4 2022 for the region has returned to and surpassed pre-crisis levels, as demonstrated from a review of the figures presented in Table 6 above.

Table 7
Persons at work in Kilmeague South and Co. Kildare by Occupation

	Kilmeague South 2016		Co. Kildare 2016	
Occupation	**No.**	**%**	**No.**	**%**
Managers, Directors and Senior Officials	58	6	9,563	8.9
Professional Occupations	116	12.1	18,877	17.6
Associate Professional and Technical Occupations	93	9.6	14,029	13.1

Administrative and Secretarial Occupations	95	9.8	11,653	10.4
Skilled Trades Occupations	147	15.2	13,450	10.9
Caring, Leisure and Other Service Occupations	88	9.1	7,328	6.8
Sales and Customer Service Occupations	64	6.6	7,211	6.7
Process, Plant and Machine Operatives	96	9.9	7,215	6.7
Elementary Occupations	86	8.9	9,205	8.6
Not stated	119	12.3	8,318	7.7
Total	962	100.0	106,849	100.0

5.33 The population in Kilmeague South and Kildare is categorised by occupation as per table 7. This shows that the trend in Kilmeague South is broadly similarly to that in the wider county, albeit that a higher proportion of people are engaged in skilled trade occupations in Kilmeague South than in Kildare.

5.34 A breakdown of the principal economic status for the nearest town Prosperous is provided below as per table 8.

Table 8
Principal economic status in Prosperous and Co. Kildare

	Prosperous 2016		Co. Kildare 2016	
Industry	**No.**	**%**	**No.**	**%**
At work	880	51.8	95,947	56.7
Looking for first regular job	16	0.94	1,395	0.82
Unemployed having lost or given up previous job	134	7.8	10,902	6.4
Student	225	13.2	20,559	12.1
Looking after home/family	181	10.6	14,478	8.5
Retired	195	11.4	18,890	11.1
Unable to work due to permanent sickness or disability	66	3.8	6,255	3.7
Other	1	0.05	518	0.3
Total	1,698	100	168,944	100

IMPACT ASSESSMENT

Evaluation Methodology

5.35 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.

Employment

Operational Stage Impacts

5.36 The proposed development will provide employment for up to 10 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.

5.37 This is a medium-term and positive impact that would not have significant effects on the environment.

Post - Operational Stage Impacts

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

Human Health

5.39 The key pathways in relation to human health in this instance are air, noise, water and soil.

Construction & Operational Stage Impacts

5.40 The operational phase of the development relates to the extraction of aggregates within the proposed sand and gravel pit area using conventional techniques and the importation of inert waste materials for the restoration of the site to a woodland / natural habitat. This stage of operations has the potential to generate impacts that would have effects on human health through the pathways of air, noise, water and soil.

5.41 As outlined in chapter 7 regarding land, soils and water, chapter 10 regarding air quality and chapter 11 regarding noise, a number of mitigation measures are proposed and the residual effect of the proposed development is predicted to be negligible to acceptable.

5.42 On this basis, it is considered that there would be no likely significant temporary or permanent effects on human health during the construction and operational stage following mitigation.

Post - Operational Stage Impacts

5.43 Following restoration, the potential effects on air quality and noise would cease owing to the cessation of extraction operations and restoration operations.

5.44 As outlined in chapters 7 (land, soils and water), 10 (air quality) and 11 (noise) mitigation measures are proposed. Based on the proposed mitigation measures, the potential for residual effects is predicted to be negligible. On this basis, it is considered that there would be no likely significant effect on human health during the post-operational stage.

Amenity

5.45 The key matters in relation to amenity in this instance are air, noise, landscape and traffic.

Construction & Operational Stage Impacts

5.46 The construction & operational phase would require the extraction of aggregates and the importation of inert waste materials, which has the potential to generate dust and noise. In addition, there would be vehicle movements associated with the proposed development and a change in the landscape.

5.47 As outlined in chapters 10 (air quality), 11 (noise), 12 (landscape) and 13 (traffic), mitigation measures are proposed. Based on the proposed mitigation measures, the potential for residual effects during the construction and operational phase is likely to be negligible to acceptable. On this basis, it is considered that there would be no likely significant effect on amenity during the operational stage.

Post - Operational Stage Impacts

5.48 Following restoration, the potential effects on air, noise, and traffic would cease owing to the cessation of extraction and restoration operations, the cessation of machinery operation and the growth of woodland & vegetation.

5.49 Clearly, following the cessation of the proposed works, the appearance of the application site will have altered. As outlined in chapter 12 relating to landscape, the effects of the restored development will be negligible.

5.50 Based on the anticipated outcomes of the proposed development, the potential for residual effects during the post-operational phase is likely to be low. On this basis, it is considered that there would be no likely significant effect on amenity during the post-operational stage.

Unplanned Events

5.51 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)”.

5.52 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.

5.53 Unplanned events in relation to the proposed development could potentially relate to:

- instability following the extraction of sand and gravel or deposition of imported inert waste materials;
- spill from traffic accidents;
- flooding.

5.54 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 sand and gravel would be unlikely to have any significant impacts on employment, human health or amenity, particularly beyond the site. The final restoration will provide for the restoration of the site back to original ground levels, and planting of woodland.

5.55 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. Appropriate mitigation measures and monitoring have been proposed to ensure that there are no potential impacts on the water environment as a result of unplanned events at the site.

5.56 The traffic and transport assessment, carried out as part of the EIAR (Chapter 13), indicates that existing road network can 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.

Cumulative / Synergistic Impacts

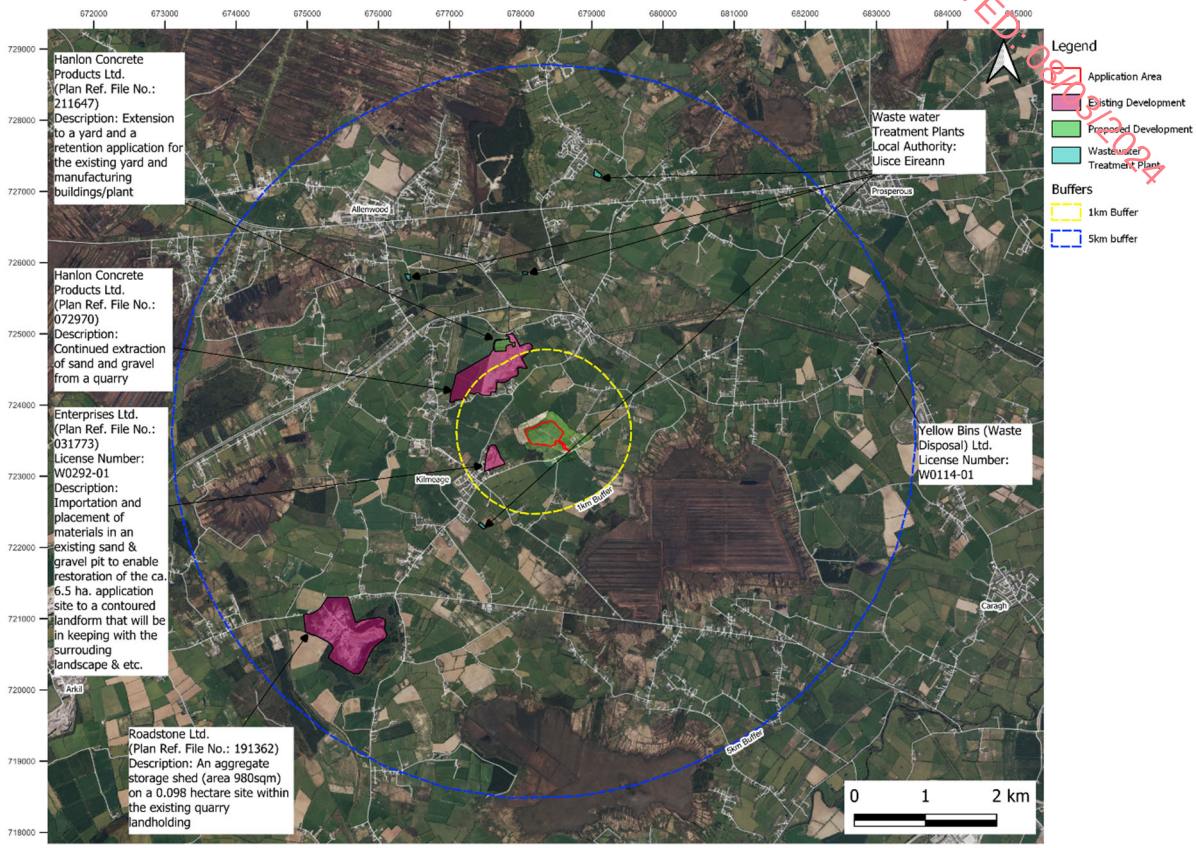
5.57 In the assessment of cumulative effects other permitted and proposed developments in the surrounding area have been considered where they have the potential to generate cumulative effects with the proposed development. Chapter 16 sets out the methodology for identifying those developments which have the potential to cause cumulative effects. It excluded developments that were already constructed 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 (refer to Figure 16.1) were short-listed as having the potential to result in cumulative effects:

- Plan File Ref. No 23/60256 - for (i) Extension to the existing sand and gravel pit with an extraction area of 4.890 hectares; (ii) Use of the existing sand and gravel pit for processing, storage of processed and unprocessed aggregates over an area of 4.681 hectares; (iii) Provision of mobile screening plant (no washing of aggregates will take place on site) and installation of a wheelwash within the existing sand and gravel pit; (iv) Restoration of the existing sand and gravel pit and proposed extension area to agricultural use with a total area of 9.571 hectares; (v) and all other ancillary site development works and activities associated with the proposed development. The duration for which the planning permission is sought is ten (10) years. Planning permission was previously granted for the existing sand and gravel pit and proposed extension area under Reg. Ref. 05/2340 as approved by An Bord Pleanála PL09.218352 and an extension of duration was also approved by Kildare County Council under Reg. Ref. 15/125 – Planning permission for both the existing sand and gravel pit and proposed extension have expired as has the extension of duration. No works have taken place since planning permission expired. An Environmental Impact Assessment Report (EIAR) will be submitted to the planning authority with the application
- Plan File Ref. No. 23/60266 - 1. Quarry development and associated processing previously permitted under P. Reg. Ref. No. 99/2042 and ABP Ref. PL09.123207) to include drilling, blasting, crushing and screening of rock; and lateral extension to same, with an overall extraction area of c. 6.2 hectares with no vertical deepening below the existing quarry floor. The appropriate period of planning register reference 99/2042 was extended by order dated 03/02/2017 by P. Reg. Ref. No. 16/1246; 2. Importation of up to 35,000 tonnes per annum of processed fine aggregate, principally sand for use in readymix concrete production on site; 3. Use of buildings and structures associated with the sand and gravel pit previously granted planning permission under P. Reg. Ref. No. 03/2754 comprising of the crushing, washing and screening plant with associated silt disposal lagoons; readymix concrete batching plant including powerhouse; prefabricated office; weighbridge; workshop building with concrete laboratory and bunded fuel tanks; aggregate storage bays; and one liquid effluent treatment system unit; 4. Closure of the existing site entrance with provision of a new site entrance located to the north of the existing entrance; realignment of the main internal site access road from the new site entrance to the central processing area with provision of a new wheelwash system; acoustic fence screening

(c.2m in height x 170m in length); and a new screening berm along the western site boundary; 5. Restoration of the site lands will be to a combination of beneficial agricultural and ecological after-uses; 6. All associated site works within an overall application area of c. 51.7 hectares. The proposed operational period is for 10 years plus 2 years to complete restoration (total duration sought 12 years); and 7. Provision is also made for 3 no. sections of road improvements (widening) along the haul route between the site entrance and the R148 regional road. The proposals at the identified locations include for works in the public road and verge that aim to achieve a consistent carriageway width of 6.0m along with provision of verge widening on the inside of the three bends to improve forward visibility and intervisibility for all opposed traffic including traffic generated by the proposed development. An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of this planning application. Assessed as part of baseline as not new use.

- Plan File Ref. No. 23/60102 - Of the continued use of the existing sand and gravel quarry workings (permitted under PL. Ref. 07/1560, ABP Ref. PL 09.229696) including washing, crushing and screening plant, silt lagoons, overburden storage, screening berms and site infrastructure comprising site office (including welfare facilities), store, 2 no. concrete batching plants and block yard, wheelwash, service shed, bunded fuel storage and other ancillaries. It is also proposed to continue use of a concrete batching plant and ancillaries permitted under planning permission PL. Ref. 22/533. The total area (c. 31 ha) will be subject to progressive restoration with final restoration to agricultural/amenity use. An Environmental Impact Assessment Report (EIAR) will be submitted to the planning authority with the application – Assessed as part of baseline due to continued use not new use.
- Plan File Ref. No. 23/613 - (1) Extend the life of the existing sand and gravel pit development totalling c.23.2 hectares previously granted under planning permission 99/1200 (ABP PL09.118274) with processing that includes crushing, washing and screening, and 07/977 (ABP PL09.226718). The sand and gravel extraction will be dry working above the water table, (2) Extend the life of the proposed sand and gravel pit extension area totalling c. 30.9 hectares previously granted under planning permission 07/977 (ABP PL09.226718). The sand and gravel extraction area will be c.25.7 hectares and will consist of dry working above the water table; (3) Include for all associated services and ancillary works consisting of: (a) the existing processing plant for the purposes of crushing, washing and screening; (b) the existing office, toilet and associated waste water treatment system, canteen, weighbridge, wheelwash and site entrance; (c) the construction of new screening berms on the northern and western boundaries of the proposed extension area; (4) Restoration of most of the worked-out sand and gravel pit (c. 39.6 hectares) to its surrounding/former ground level using naturally occurring materials, principally inert soil and stone generated by construction and development activity and imported as waste under licence or as by-product (in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (as amended). Restoration of the entire site to a combination of agricultural and nature conservation areas; (5) installation of a dedicated covered waste inspection and quarantine shed and for storage of plant and machinery (c.20M length x 12m width x 7.5m height); (6) The proposed development is within an overall application area of c. 54.1 hectares and is for a total period of 25 years (the sand and gravel extraction operational period is for 22 years and the importation of materials for restoration is for 25 years). An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of this planning application. Part of the proposed restoration element of the development will require a waste licence from the Environmental Protection Agency. (This site is located 18 km from the application site). Assessed as part of baseline due to continued use not new use.
- 211647 – For the extension to a yard and a retention application for the existing yard and manufacturing buildings/plant and all associated ancillary facilities within an existing quarry complex – approved 27/10/2022. Appealed PL09.315110
- 201409 – Upgrading of entrance, installation of site facilities for extraction and processing of sand and gravel. An Environmental Impact Assessment Report (EIAR) has been prepared in respect of this planning application. Revised by Significant Further Information which consists of

updates to the EIAR and revised plans. Appeal – PL09.311677. (This site is located 30 km from the application site). Assessed as part of baseline due to existing use.



Cumulative Effects – Material Assets of Human Origin

Land Use

5.58 The above planning applications predominately relate to developments that are all distant from the application site. If permitted these developments would result in the alteration of the existing land-use however, given the distance between the proposals, it is not anticipated that any cumulative effects would occur as a result of the construction or operation of these developments.

5.59 Planning Application 211647 relates to a site that is situated 1.35km to the north-west of the application site. This application has been approved by Kildare County Council; however a financial appeal is currently ongoing. The proposed development comprises an extension to an existing storage yard within a larger sand and gravel pit with a concrete production facility. The development would result in the change of use of the land; however the effect is not significant given the context within which it is set. It is therefore not anticipated that any cumulative effects would occur as a result of the construction or operation of both developments.

Property

5.60 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.

Transport Network

5.61 As stated above the above planning applications predominately relate to developments that are all distant from the application site and would not utilise the same local road network. It is therefore not anticipated that any cumulative effects would occur as a result of the construction or operation of these developments.

5.62 Planning Application 211647 relates to a site that is situated 1.35km to the north-west of the application site. The proposal sought to enlarge an existing storage yard and it would therefore not have any significant effect in terms of transport. It is therefore not anticipated that any cumulative effects would occur as a result of the construction or operation of these developments.

Recreation & Amenity

5.63 No significant adverse cumulative effects on recreation and amenity are anticipated due to the construction or operation of the above developments as they are dispersed throughout the county and would not in combination have any significant effect on recreational or amenity resources. The restoration of each of the sites would however offer potential cumulative benefits for amenity and recreation.

Public Utilities

5.64 No significant cumulative effects on public utilities are anticipated due to the construction or operation of the above developments as they are dispersed throughout the county and would not either individually have any effect on existing public utilities.

Transboundary Impacts

5.65 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

5.66 It is not anticipated that the effects of the proposed development on population and human health would interact significantly with other impacts.

'Do-nothing Scenario'

5.67 If planning permission is not approved for the sand and gravel pit and inert waste facility, this would result in no impacts related to noise, air, dust, water and traffic. This would also result in an adverse effect on employment, because the workforce that would have otherwise been employed by the development would not exist.

MITIGATION MEASURES

Construction & Operational Stage

5.68 Mitigation measures to be adopted in relation to population and human health during the operational stage will relate to minimising the effect of the development on surrounding sensitive receptors in relation to air, noise, water, soil, traffic and landscape. These measures relate primarily to avoidance, prevention and reduction and are discussed in the relevant chapters of the EIAR.

5.69 These mitigation measures include the following (refer also to Chapter 16):

Table 9
Construction & Operational Stage Mitigation Measures

Topic	Mitigation Measure
Soil	Construction Phase: • Adopt a suitable landscape and restoration plan post-operation and upon completion of infilling to mitigate local geological environment impacts due to site earthworks and aggregate extraction. • Utilize stripped topsoil for berm formation along the western and southeastern boundaries and for site restoration. • Implement controlled refueling with drip trays for all plant and machinery, which will be serviced prior to site mobilization. • Designate trained operators for refueling tasks, store oils and lubricants on drip pallets in a specified area with drainage to an oil interceptor, and establish emergency procedures and spill kits for accidental spillages. Erosion Control: • Use soil from extraction areas for boundary berm creation, contain erosion within the pit, and design pit wall slopes to industry standards to prevent failure. • Store upper vegetative layers appropriately for vegetation growth in soil storage areas, with re-seeding and planting as needed. Operational Phase: • Adhere to EPA guidance on soil recovery waste acceptance criteria for inert soil and stone waste materials. • Follow "Consultation Paper Regulation 27(7) National By-Product Criteria" for by-product material acceptance. • Ensure sourced material is inert, with pre-agreed source sites free of pollutants, unauthorized materials, and invasive species. • Conduct regular checks of incoming loads for suitability, operate under an Environmental Management System, and implement pollution prevention measures. • Prepare and enact an emergency response procedure, complete environmental monitoring, and secure the site to prevent unauthorised dumping. • Document waste recording procedures for all incoming materials and implement a phased restoration plan with species-rich grassland. Restoration Phase: • Implement a restoration plan considering local topography and land-use, with topsoil placement and tree planting to recreate pre-development habitat. • Install trespass-proof fencing along infill area boundaries and ensure the removal of all plant and equipment post-restoration. • Introduce a suitable mix of woodland planting to establish a similar habitat to that existing prior to development.

Water	Construction/Extraction Phase Mitigation: • Drainage Control Measures for Surface Water Quality: ○ Placement of silt fencing down-slope of the excavation area before overburden stripping works commence. ○ Daily monitoring of earthworks by a qualified person to prevent sediment or deleterious matter from leaving the site. ○ Scheduling overburden stripping and landscaping works during low rainfall periods to minimize run-off and siltation. ○ Planting trees and grasses on landscaped areas and perimeter berms to reduce surface water erosion. ○ Implementing wheel washers, dust suppression, and regular plant maintenance as per CIRIA guidance. • Groundwater Vulnerability and Quality Protection: ○ Best practice measures for oil usage and refueling of plant and machinery. ○ No extraction within 4.5m of the groundwater table to avoid affecting the "High" GSI groundwater vulnerability rating. ○ Extraction depth set at 6m above the highest recorded bedrock elevation to ensure no impact on groundwater levels. • Mitigation for Oil/Fuel Spills and Leaks: ○ Servicing all plant and machinery before site mobilization. ○ Using drip trays for refueling and retaining oil leaks. ○ Storing oils and lubricants on drip pallets in a designated area with drainage to an oil interceptor. ○ Establishing emergency procedures and spill kits on-site. • Operational/Infilling Phase Mitigation: ○ Groundwater Quality Due to Imported Material: ○ Sourcing proven inert material, with regular checks on incoming loads for suitability. ○ Operating under an Environmental Management System with comprehensive pollution prevention measures. ○ Implementing a phased restoration plan with both native and imported material. ○ Documented waste recording procedure for all material entering the site. • Surface Water and Groundwater Contamination Prevention: ○ Implementing detailed mitigation measures for the control of fuels and oils, similar to the construction phase. • Groundwater Vulnerability Improvement:

	○ Importing inert fill to increase the thickness of overburden, improving the groundwater vulnerability rating to Moderate from High. • Hydrological Protection for Downstream Sites: ○ A series of mitigation measures designed for the protection of surface and groundwater quality to protect downstream designated sites. • WFD Status Compliance: ○ Ensuring no negative change in surface water or groundwater quality status, compliant with the Water Framework Directive and Groundwater Directive. • Groundwater Quality and Quantity for Local Wells: ○ Minimal abstraction (<25m3/day) for operational purposes, ensuring no significant effects on local groundwater supplies. • Surface Water Flood Risk Management: ○ Implementing a drainage network and restoration plan to manage rainwater and surface runoff, reducing the potential for runoff and localised flooding.
Dust	• Minimise drop heights when handling materials. Soils placed directly into screening berms or in progressive works. Avoid working in adverse/ windy conditions; • Minimise distances of onsite haul routes; • Use of water sprays / tractor & bowser to moisten surfaces during dry weather; • Restrict vehicle speeds through signage / staff training; • Location of haul routes away from sensitive receptors; • Use of road sweeper to reduce the amount of available material for re-suspension; • Paved access road; • Avoid working in adverse weather conditions and faulty dust filters; • Seed surfaces of completed mounds / bunds of top soil; • Limit mechanical disturbance; • Retention of a buffer strip of trees around the site perimeter; • Locate processing plant within the pit void.
Noise	• A screening berm will be constructed at the location shown on Planning Drawing 4 to act as acoustic barriers. The berm will be inspected on a regular basis and maintained as necessary;

	• Regular maintenance of items of plant to ensure that they are operating efficiently; • Location of noisy items of plant at the lowest part of the working pit floor and as close to the pit face as possible to provide optimum noise screening; • Design of internal haul roads with as low a gradient (1:10) as possible to minimise excessive revving of vehicle engines travelling on-site. • Regular maintenance of haul routes to avoid potholes and uneven surfaces; • Avoiding unnecessary revving of engines, reducing speed of vehicle movement and keeping lorry tailgates closed where possible; • All mobile equipment is throttled down or switched off when not in use; • Orienting directional noise away from sensitive areas where possible.
Landscape	• Consideration has been given to what measures can be taken to reduce, avoid, compensate and remedy any potential impacts. From a landscape and visual perspective, given the site's discrete and visually contained location, and the nature of the development which seeks to cut into the landscape, extensive planting to screen this proposal is not considered necessary. • Proposed landscape and visual mitigation measures principally relate to the retention of vegetation surrounding the site. At present there is mixed forestry on site, therefore it is proposed that portions of the forestry are retained during the construction/operational phase of the development, forming a band of vegetative screening along the outskirts of the proposed excavation area. • In addition, it is proposed that 2 no. of 4 metre high landscaped berms are constructed along the south and southeast flanks of the proposed excavation area. These berms will be planted with native vegetation and will aid the screening of the excavation area and associated operational activities within the site. This mitigation is embedded within the overall design of the development as the berm will be formed from excavated topsoil/subsoil within the site. Embedded mitigations can be identified within the design and layout drawings that accompany this application. • The site will be worked in a phased manner (refer to Figures 2.1 – 2.6), with extraction operations taking place in tandem with importation of inert waste material. • On completion of the development it is proposed to restore the entire quarry development to woodland / natural habitat. This will be achieved through the following measures (refer to the Restoration Phase, as set out in the Landscape and Restoration Plan, as provided in Chapter 3 of this EIAR): ○ removal of all plant, machinery and stockpiles from the site; ○ restoring the site back to original ground levels using imported inert waste material; ○ retention of all existing boundary vegetation.

Post – Operational Stage

5.70 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 / Operational Stage

5.71 As outlined in chapters 7 (land, soils and geology), 8 (water), 10 (air quality), chapter 11 (noise), chapter 12 (landscape and visual) and 13 (traffic) of this EIAR, the mitigation measures would successfully reduce the effects of the proposed development during the operational phase as follows:

- Land, Soils and Water: negative, imperceptible, direct, short term, unlikely effect on the land soils and geology environment
- Water: No significant effects
- Dust: no significant adverse air quality effects for both human and ecological receptors.
- Noise: Not significant
- Landscape: Four of the eight representative viewpoints taken will have an Imperceptible / Neutral significance of impact, whilst two of the eight will have a Slight significance of impact. The remaining two viewpoints incur a Moderate-slight significance of impact and this principally relates to the subtle dip in the skyline ridge profile relative to its slightly more crested present day profile.
- Traffic: The assessments have concluded that the links and junctions will operate within capacity for each of the assessment years.

5.72 No specific mitigation measures are proposed in relation to human health and population.

Post - Operational Stage

5.73 As outlined in chapters 7 (land, soils and geology), 8 (water), 10 (air quality), chapter 11 (noise), chapter 12 (landscape and visual) and 13 (traffic) of this EIAR, the mitigation measures would successfully reduce the effects of the proposed development during the post operational phase as follows:

- Land, Soils and Water: positive, moderate, direct, permanent, likely effect on the land, soils and geology environment
- Water: No significant effects
- Dust: Negligible
- Noise: Negligible
- Landscape: Negligible
- Traffic: The assessments have concluded that the links and junctions will operate within capacity for each of the assessment years.

5.74 No specific mitigation measures are proposed in relation to human health and population.

MONITORING

5.75 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. On this basis, no specific monitoring is required in relation to population and human health.

Environmental Monitoring Programme

5.76 Noise, dust and water monitoring will be carried out on a regular basis, to demonstrate that the development is not having an adverse impact on the surrounding environment.

Dust Monitoring

5.77 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 be submitted to Kildare County Council on a regular basis for review and record purposes.

Noise Monitoring

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

Water Monitoring

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

5.80 It is proposed that boreholes BH1 – BH5, which are fitted with standpipes and gravel pack, will be used as groundwater monitoring wells during each phase of the development. Monitoring will be completed to satisfy any planning conditions or waste licence requirements.