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INTRODUCTION

4.1 This Chapter of the Environmental Impact Assessment Report (EIAR), prepared by SLR Consulting Ireland, addresses the potential effects of a proposed development at the existing Rossmore Quarry on population and human health. The existing quarry, which includes rock extraction / processing, aggregate production, readymix concrete and asphalt production, is located in the townland of Rossmore, Carrigtwohill, Co. Cork. A ground limestone processing plant has been granted planning permission but is not yet constructed.

4.2 The proposed development will consist of:

- extension of the existing quarry over an extraction area of c. 12.5 hectares to a level of minus 35m OD;
- extraction and processing of limestone using the industry standard blasting and processing techniques in place at the existing quarry;
- provision of overburden storage area;
- provision of a vehicular tunnel underneath the local private road to link the extension area to the existing quarry;
- operational landscaping including perimeter screening berms around the proposed extension area;
- restoration of the quarry to natural habitat after-uses; and
- all related ancillary site works within an overall application area of c. 22.3 hectares, and all for a period of 35 years and a further 2 years to complete final restoration of the site.

The proposed development, in conjunction with the existing quarry permitted under planning ref. 21/6983 (ACP Ref. ABP-313-903-22), will result in a combined extraction capacity of 500,000 tonnes per annum. The permitted extraction capacity of the existing quarry area will remain unchanged.

4.3 Further information on the proposed development, site activities, environmental management systems and controls at the application sites are provided in the Chapter 2 of this EIAR.

Scope of Work

4.4 The EPA guidelines in relation to the preparation of EIAR¹ note the following in respect of population and human health:

- assessment of land-use planning and demographic issues or detailed socio-economic analysis is not generally required;
- economic development or settlement patterns are only relevant if they give rise to new development and associated effects;

¹ Environmental Protection Agency (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford.

- human health should be considered in the context of the relevant environmental topics addressed by the EIAR;
 - the effects on human health via relevant pathways (such as air and water) should be considered in the context of accepted standards for exposure, dose or risk;
 - other health and safety issues are addressed under other EU directives.
- 4.5 On the basis of the guidelines, the scope of this chapter of the EIAR is limited to a consideration of population, employment, amenity and human health in the context of the topics addressed by this EIAR.
- 4.6 The Institute of Environmental Management and Assessment (IEMA) issued two guidance documents in 2022 on the assessment of human health within EIA as follows:
- Effective Scoping of Human Health in EIA; and
 - Determining Significance for Human Health in EIA.
- 4.7 Section 1.11 of the IEMA Guidance on the Effective Scoping of Human Health in EIA recommends that if there is not potential for likely significant population effect, human health should be scoped out of the EIA. The guidance makes clear that the topics of population and human health are separate technical topics. The assessment of socio-economic conditions addressed through the topic of 'Population' provides baseline information on which an assessment of sensitivity of human health can be made, therefore it is considered appropriate that both topics are covered within this chapter.
- 4.8 **Table 4-1** of this chapter sets out an initial review of the wider determinants of health identified within the guidance on scoping of human health and how these have the potential to be impacted by the proposed development. The initial assessment within Table 4-1 provides a framework in order to focus the assessment of human health impacts on areas of most relevance.
- 4.9 This Chapter of the EIAR presents baseline information on population (including employment, amenity and community resources) and assesses likely impacts as a result of the proposed development. This facilitates an assessment of the potential impacts on human health where there is a potential for this to be impacted as identified within Table 4-1.

Table 4-1 Wider Determinants of Health and Proposed Development

Categories	Wider Determinants of Health	Commentary
Health related behaviours	Physical activity	No changes likely as a result of proposed development
	Risk taking behaviour	No changes likely as a result of proposed development
	Diet and nutrition	No changes likely as a result of proposed development
Social environment	Housing	Enhanced source of aggregates has potential to support increased supply of infrastructure
	Relocation	Not relevant, no relocation proposed
	Open space, leisure and play	No changes likely as a result of proposed development

Categories	Wider Determinants of Health	Commentary
	Transport modes, access and connections	No changes likely as a result of proposed development, using existing accesses/routes, using tunnel to avoid impacts on local road
	Community Safety	No changes likely, boundaries of application site will continue to be kept secure
	Community identity, culture, resilience and influence	No changes likely, proposed development is activity that is in keeping with existing activity at site
	Social participation, interaction and support	Not relevant to application site/proposed development
Economic environment	Education and training	Not relevant to application site/proposed development
	Employment and income	Increased quality of resource will sustain small-scale employment within the local area
Bio-physical environment	Climate change mitigation and adaptation	Potential for aggregates from site to contribute to developing infrastructure in line with national planning / Increased CO ₂ emissions from activities on site
	Air quality	Potential for air quality impacts from machinery and dust from activities on site
	Water quality or availability	Potential for contaminants in, run-off to, impact on surface water and/or groundwater
	Land quality	Removal of minerals, overburden
	Noise and vibration	Potential for impacts from site activities
	Radiation	Potential exposure to radon gas
Institutional and built environment	Health and social care services	No changes likely as a result of proposed development
	Built environment	Enhanced supply of aggregates has potential to support enhancements to wider infrastructure
	Wider societal infrastructure and resources	Enhanced supply of aggregates has potential to support enhancements to wider infrastructure

Consultations

- 4.10 Statutory consultation will be undertaken by CCC during its consideration of the planning application. Recent feedback from CCC and the Health Service Executive during the consultation / Further Information stage on similar planning applications have been considered in the population and human health assessment set out in this chapter.
- 4.11 In addition, consultation has been undertaken directly with EIA specialist contributors such as hydrogeology, noise and air in the preparation of the population and human health assessment.

Contributors / Authors

- 4.12 This chapter of the EIAR was prepared by Lynn Hassett who is an EIA co-ordinator with a BSc in Applied Ecology (2000) and a MSc in Environmental Impact Assessment (2001). She has over 18 years of experience of EIA across the not-for-profit, public and private sectors in the UK and Ireland. She has worked on both the review of EIA on behalf of planning authorities assessing applications and in the production of them to support planning applications being lodged. She is a Practitioner member of the Institute of Environmental Management and Assessment, which she is a member of since 2001. She is also a Full Member of the Institution of Environmental Sciences, which she joined in 2023.
- 4.13 She has worked on numerous extractive industry and other sector planning applications and EIARs. She has experience in both the project management of EIA as well as preparation of generalist assessments such as Population and Human Health and Material Assets.

Limitations / Difficulties Encountered

- 4.14 No limitations or difficulties were encountered in the preparation of this chapter of the EIAR.

REGULATORY BACKGROUND

Legislation

- 4.15 There is no specific legislation relevant to this chapter of the EIAR. Legislation that is relevant to each pathway (noise, air, water, etc.) is addressed elsewhere in this EIAR. However, the framework of information provided within this chapter is informed by:
- Section 37D and 171A of the Planning and Development Act, 2000 (as amended);
 - Section 94 and Schedule 6 of the Planning and Development Regulations, 2001 (as amended); and
 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.
- 4.16 Of relevance to human health, the Irish Government, through the Climate & Low Carbon Development (Amendment) Act 2021, commits to achieving 'net-zero' emissions by 2050. Undertakings to achieve this include a national adaptation framework to be provided at least every 5 years, Climate Action Plans to be updated annually, the preparation of a long-term climate action strategy, the provision of a carbon budget programme, and a roadmap of actions and other measures, refer to EIAR Chapter 9 Climate for further climate-related details.

Guidance and Technical Standards

- 4.17 This chapter of the EIAR has been prepared on the basis of the Guidelines on the Information to be contained in Environmental Impact Assessment Reports by the EPA (2022).
- 4.18 There are no technical standards relevant to this chapter of the EIAR. Technical standards, if any, that are relevant to each pathway (noise, air, water, etc.) are addressed elsewhere in this EIAR.

- 4.19 The framework for human health protection is predominantly set out within World Health Organisation (WHO) Guidelines and Limits.
- 4.20 The WHO works worldwide to promote health, keep the world safe, and serve the vulnerable. Their goal is to ensure that a billion more people have universal health coverage, to protect a billion more people from health emergencies, and provide a further billion people with better health and well-being. It has a wide remit, from setting limits to prevent danger to human health, to providing responses to health emergencies, and promoting health and wellbeing.
- 4.21 The Institute of Public Health (IPH) is an organisation that informs public policy to promote health and wellbeing and reduce health inequalities in Ireland and Northern Ireland. It has previously provided comments on draft legislation on EIA and has been represented on the working group for the IEMA guidance on human health in EIA. It has its own guidance on stand-alone Health Impact Assessments (HIAs); however, the guidance is clear that EIA does not have to adopt all the HIA methods and tools. The IPH set its Strategic Objectives 2020-2025 in order to be able to fulfil its role to its best potential in informing public health policy. The Institute supports the national implementation of the UN Sustainable Development Goals, including SDG3, which focuses on good health and wellbeing. Taking opportunities to enhance wellbeing is a common thread in the IPH and IEMA guidance on human health assessment.
- 4.22 There is no policy or validation requirement to undertake HIA for the proposed development, therefore this chapter of the EIA aligns to HIA principles, as identified in the IPH Guidelines, including considering wider determinants of health, considering existing inequalities of health and encouraging stakeholder engagement.
- 4.23 The Healthy Ireland Framework was launched by the Irish Government in 2013, and has four goals:
- Goal 1: Increase the proportion of people who are healthy at all stages of life
 - Goal 2: Reduce health inequalities
 - Goal 3: Protect the public from threats to health and wellbeing; and
 - Goal 4: Create an environment where every individual and sector of society can play their part in achieving a healthy Ireland.
- 4.24 In 2016, the Government approved the creation of a Healthy Ireland Fund (HIF) to support the implementation of health and wellbeing programmes and projects in a variety of settings. The first 3 rounds of funding were administered by Pobal on behalf of the Department of Health between 2017 and 2022. The 4th round of funding is currently being rolled out and uses feedback from the previous funding rounds to give Local Authorities more discretion on spending of the fund.
- 4.25 The Healthy Ireland Framework is delivered within each local authority area through the Local Community Development Committee (LCDC), which also has the responsibility for creating a Local Economic and Community Plan (LECP) every six years. The Cork LECP 2024-2030 sets a High-Level Goal 3 as 'A Healthy and Active County'. It will focus on the County's age friendly strategy, as well as increasing physical activity and accessibility of residents to healthy initiatives. Cork County Council has a dedicated Healthy Ireland Co-ordinator who works with a number of organisations to deliver the health and wellbeing agenda of the County through the delivery of innovative events and initiatives that impact on the wider determinants of health.
- 4.26 Cork City Council is the first local authority in Ireland to carry out a Health Impact Assessment (HIA), which was done on the City Development Plan 2022-2028. The purpose

of undertaking the HIA of the City's Plan was to identify opportunities for urban planning to improve residents' health, by improving housing, public space, transport, walkability and access to work. The role of planning in influencing wider determinants of health is increasingly being recognised as having potentially more positive influence on health outcomes than healthcare provision.

Cork County Council Planning Policy

- 4.27 The Cork County Development Plan 2022-2028 (CCDP) is the statutory plan detailing the policy objectives and standards guiding the sustainable development of County Cork.
- 4.28 The application site lies within the administrative area of Cork County Council, therefore the planning and development controls pertaining to it are those outlined in the current Plan.
- 4.29 Chapter 5 'Rural' includes quarrying as an important resource available within the county that can sustain goods, services, educational and community facilities and economic opportunities in rural areas.
- 4.30 Chapter 8 'Economic Development' makes reference to the need to protect reserves of aggregates and minerals from development that might prejudice their utilisation. In line with this Cork County Council recognises the economic value and significance of the aggregate and mineral sector to the local, regional and national economy in terms of employment generation and providing raw materials for the construction industry. The Council therefore aims to protect and safeguard the operations of working quarries and proven aggregate resources from incompatible developments to ensure the continued viability of the extractive industry, whilst also ensuring that environmental, rural, scenic and residential amenities are protected. Carrigtwohill is referred to as one of the areas which has a distinct cluster of quarries nearby.

RECEIVING ENVIRONMENT

Study Area

- 4.31 The study area relates to the vicinity of the application site and to those dwellings in the vicinity of the application site and has been defined as a c. 1 km buffer radius from the application site boundary as shown on **Figure 4-1**, which identifies residential and other community receptors within this zone. Although population and human health effects would not expect to be experienced at a 1 km distance from the development, the radius has been selected to facilitate a conservative assessment and to ensure that a range of community services and facilities representative of the local area were included.
- 4.32 Whilst the best efforts are made to ensure that all residential receptors within the selected buffer area of a proposed development are identified, this can be practically difficult to achieve as information is not publicly available and surveys must be respectful of private properties. The identification of receptors is also a dynamic process as new residential properties secure planning permission and are constructed/converted.
- 4.33 As the closest identified residential receptors are usually those that are considered for potential impacts as a 'worst-case scenario', efforts are concentrated on ensuring that these are accurately recorded and that is the main focus of Figure 4-1 of the EIAR.

Baseline Study Methodology

- 4.34 The Study Area described above has been taken to represent potentially sensitive residential and community receptors in the area, and identification of these has been based on a desktop map and aerial photography search, as well as information obtained from site visits by the EIA team as described throughout this EIAR.
- 4.35 Eircode data (2021), Geodirectory data (2021), and a review of recent planning applications on the Cork County Council planning portal have also been used to identify specific receptors within the 500m and 1km indicated in **Figure 4-1**. The selection of a 500m buffer is made to reflect the Institute of Air Quality Management (IAQM) Guidance which screens out receptors greater than 500m from a dust source unless there is a particularly high vulnerability, such as a hospital or high-tech facility.
- 4.36 Demographic data has been sourced from the Central Statistics Office (CSO)'s Census of Ireland publicly available records. Demographic data at the Electoral Division (ED) and Small Area (SA) level was used to represent demographic conditions within the Study Area. These are the smallest administrative levels for which demographic data is available. The application site is located in the south of the Carrigtohill ED and centrally in Small Area A047077003, as shown on **Plate 4-1**. Data relating to the State and County Cork as a whole has been reviewed to enable a comparison with the trends identified in the local level of the SA and ED.



Plate 4-1 Small Area (SA) and Electoral Division (ED) Census Boundary Lines around the Application Site

Sources of Information

- 4.37 Baseline information was obtained from the following sources:
- Myplan.ie (<http://myplan.ie/index.html>);

- Historic Environment Viewer (<http://webgis.archaeology.ie/historicenvironment/>);
- Cork County Development Plan 2022-2028;
- The environmental topic chapters of this EIAR;
- OSi Maps;
- Aerial Photographs;
- Live Register statistics; and
- CSO SAP map data.

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Site Location

- 4.38 The application site is located to the east of the existing Rossmore Quarry. It is a coastal setting, approximately 2km south of Carrigtwohill and 6km southwest of Middleton, Co. Cork. The N25 National Primary Road (E-30 European Route) which links Cork City to Rosslare Europort is c. 2km to the north (refer to EIAR Figure 1-1).
- 4.39 The application site is located in the townland of Rossmore, Carrigtwohill, Co. Cork. Access to the lands is via an existing access to the public road to the north which connects to the N25 National Primary Road to the north. The L3619 local road runs to the north and links the R624 Regional Road to the west at Fota and the N25 National Primary Road at Middleton. There are private residences along the L3619, between the existing quarry boundary and the road. Beyond the southern boundary of the lands is an access right of way to the adjacent Kilsaran quarry property lands, and Rossmore Bay, part of the Cork Harbour channel.
- 4.40 The application site and the overall site are located within undulating rural agricultural landscape. Further beyond the immediate adjacent land uses there is Fota Island Wildlife Park (2km to the west), the commercial/retail/residential centre of Carrigtwohill (2km to the north) and other extractive industries (2.5km to the north-east).

Site Description

- 4.41 The lands within the application site comprise predominantly agricultural lands, and settlement ponds used as part of the water management system for the existing quarry. **Plate 4-2** is an extract from the Corine Land Use (2018) mapping², which shows the southern portion of the site already classified as a mineral extraction site, and the remainder classified as agricultural, arable, land.
- 4.42 The existing quarry is accessed via an existing site entrance within the southeast of it, along a private road, which leads along the eastern boundary of the existing quarry to a crossroads with the east-west alignment of the L3619. The private road also serves the Rossmore Landfill and Civic Amenity Centre, which is operated by Cork County Council, to the south of the quarry.
- 4.43 All external traffic for the existing quarry and proposed development will continue to use the existing quarry access. The site will be linked to the existing quarry via a new vehicular underpass to be constructed under the private road, refer to EIAR Figure 2-2.

² <https://gis.epa.ie/EPAMaps/>

- 4.44 The surrounding area is coastal and rural, with land uses predominantly comprising a mix of agricultural, waste management, extractive, and one-off rural houses and agricultural buildings are dotted along the adjacent road network.

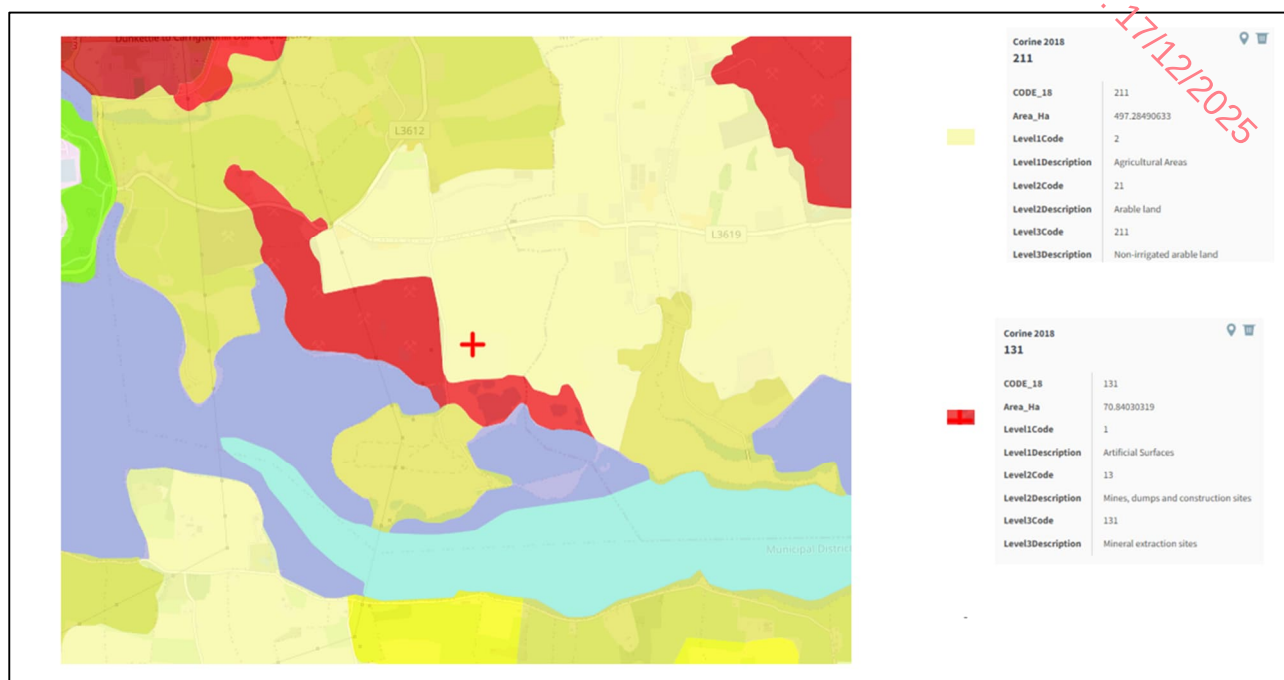


Plate 4-2 Corine Land Uses within the Application Site

Population

- 4.45 The review of population is based on the Small Area and Electoral Division census data, in which the application site is located. There were minor changes in the boundaries of these local levels between census periods, which means that the data can only be indicative of general trends. The change in population from 2011 to 2022, as per Census 2022³ for the electoral divisions, the county and the state are outlined in **Table 4-2**.

Table 4-2 - Population 2016 - 2022

	2011	2016	2022	% Change 2011-2016	% Change 2016-2022
Small Area 047077003	234	242	204	+3.4%	-15.7%
Carrigtohill ED	6,665	7,334	8,181	+10.0%	+11.5%
County Cork including City ⁴	519,032	542,868	584,156	+4.6%	+7.6%

³ <http://census.cso.ie/sapmap/>

⁴ Owing to the expansion of the Cork City administrative boundary between 2016 and 2022 it is more useful to compare Cork City and Cork County population figures across the census periods

Ireland	4,588,252	4,757,976	5,149,139	+3.7%	+8.0%
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- 4.46 The census results indicate that the population has increased significantly over the past two census periods in all except the Small Area. The rate of growth has been proportionally higher in the Carrigtohill ED. Whilst there was some population growth at the Small Area level between 2011 and 2016, there was a substantial decline in the next census period. This may, however, be the result of a change to the SA boundary in the northeast which resulted in the exclusion of a small number of properties on the opposite side of the N25.

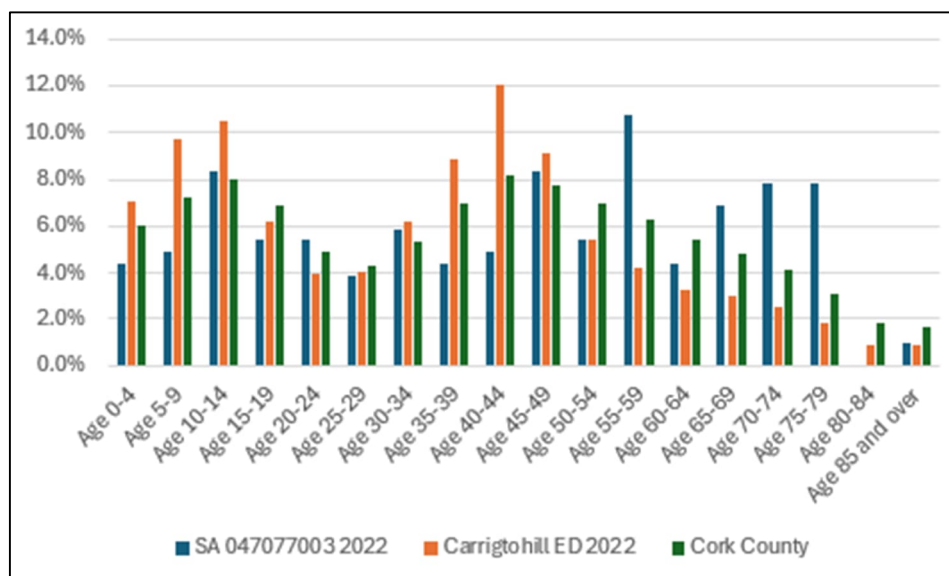


Plate 4-3 Age Distribution of Population

- 4.47 **Plate 4-3** shows the age range of the Small Area and ED population in 2022, compared with that of the County of Cork (not including Cork City). The chart suggests that there is a higher distribution of those ages 55 to 79 in the most local dataset of the Small Area, while the ED appears to have a higher proportion of those in the younger age categories, up to 44. Cork County, as a whole, shows more of a spread of ages, with proportionately more in the age categories over 80 years.
- 4.48 Looking in detail at changes between the 2016 and 2022 census periods, the most noticeable trend was the increased proportion of those aged from 70 to 79 in the Small Area (from 5.4% in 2016 to 15.6% in 2022).

Employment

- 4.49 **Plate 4-4** shows a visual breakdown of employment status in the latest Census period of 2022 within the Small Area, Carrigtohill ED, County Cork and the State. The chart shows the highest proportion of the population at work in the ED. The Small Area has higher levels of those retired, looking after family or studying. The Small Area and the ED show lower levels of unemployment and disability compared to the more strategic county and state level.
- 4.50 The closest Social Welfare Office to the application site is in Midleton, c. 6km to the northeast. According to the August 2025 Live Register statistics⁵, there were 1,069 persons

⁵ <http://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/Define.asp?Maintable=LRM07&Planguage=0>

on the live register. The figures have been showing slight variation (+/- c. 100/200 per month), before which there had been a general trend of a decline in numbers since highs in early 2011 (e.g. 3,515 in February 2011). The current live register figures are more aligned with the rates recorded in the area during the economic highs in Ireland in the early 2000's (e.g. 1,092 recorded on the live register in Middleton in March 2006).

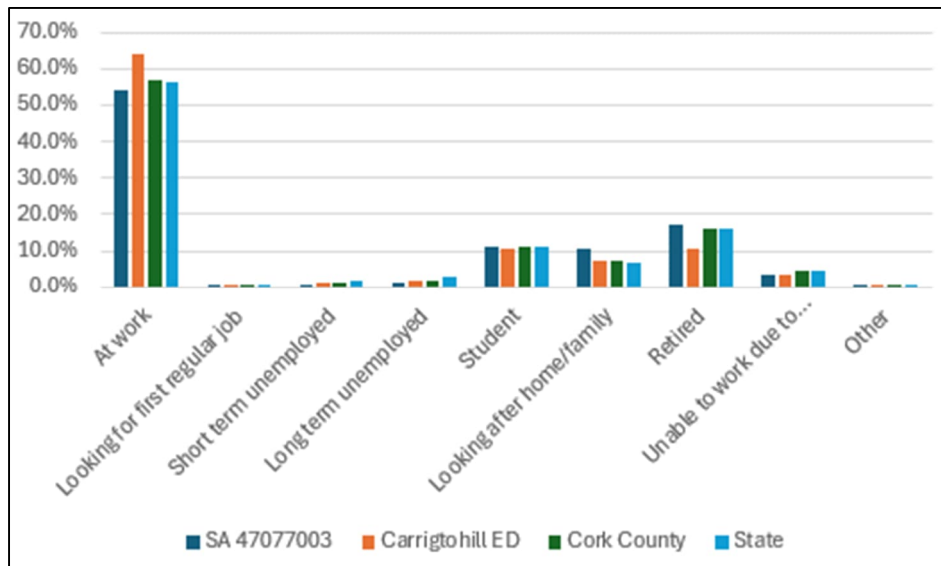


Plate 4-4 Employment Status of the Population

- 4.51 The population of the Small Area and ED compared with that within County Cork and the State is categorised by occupation as per **Plate 4-5**.
- 4.52 The chart shows that the population at the most local level (Small Area and ED) has a higher proportion of process, plant and machine operatives than at the County and State level. The Small Area has a relatively high proportion of those in skilled trades. Professional occupations are prevalent across all the levels of the population analysed.

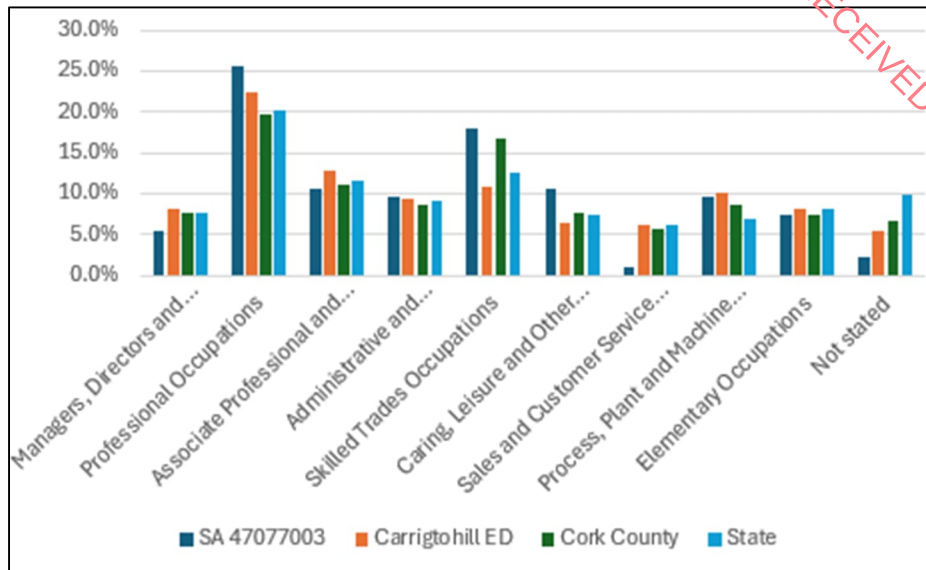


Plate 4-5 Population of Small Area 047077003, Carrigtohill ED, Cork County Council and State by Occupation

4.53 The population of the Small Area and ED compared with that within County Cork and the State is categorised by industry sector employment as per **Plate 4-6**. From this chart it can be seen that the agriculture, forestry and fishing and professional services industries are more common sources of employment than the national average, and in the case of the wider ED, the manufacturing industry is an important employer.

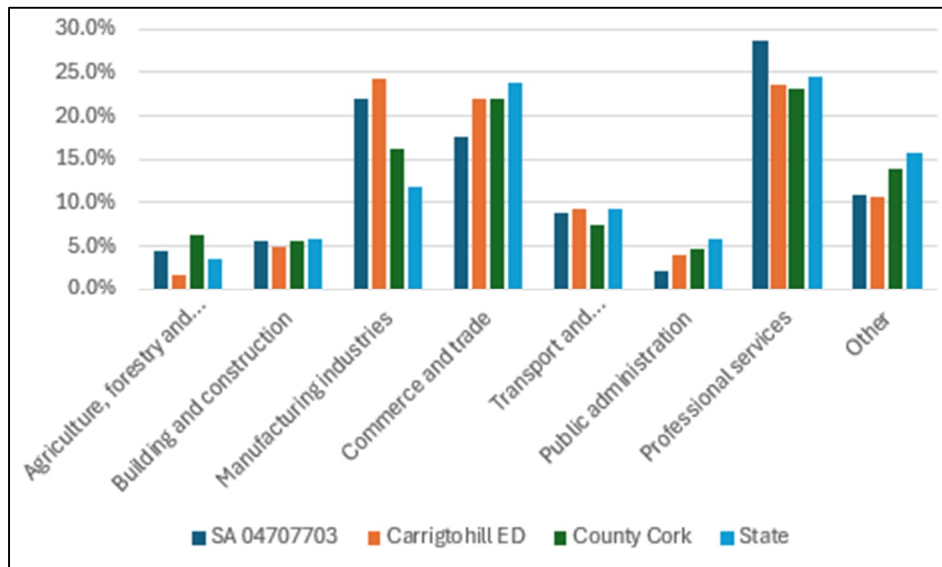


Plate 4-6 Population of Small Area 047077003, Carrigtohill ED, Cork County Council and State by Industry

Economic Activities, Amenities and Tourism

- 4.54 This section provides an overview of the recreation, amenity and tourism value in the immediate area, County Cork and the State in order to assess the potential effects arising from the proposed development.
- 4.55 Tourism is one of the major contributors to the national economy and is a significant source of full time and seasonal employment, particularly in remote rural areas which lack industry bases. Tourism statistics published by Fáilte Ireland⁶ for the Southwest region are reproduced in Table 4-3 below. Compared to the other regions of Ireland, the tourism sector in the region is extremely strong in terms of both visitor numbers and revenue generated. Tourism numbers and revenue reported in 2024 showed strong growth on 2023.

Table 4-3 Southwest Regional Performance (Tourism in 2024)

Region		Britain	Mainland Europe	North America	Other Areas	All Overseas	Northern Ireland	Domestic Trips
South west	Tourists (000s)	420	489	442	91	1,442	99	3,190
South west	Tourist Revenue (€M)	229	406	433	100	1,168	47	757

- 4.56 The Southwest region is particularly strong in terms of domestic tourism. There are numerous popular tourist attractions within a 10km radius that draw both domestic and international visitors to the wider area. According to Fáilte Ireland's Interactive Dashboard figures for 2023, the Midleton Distillery Experience (c. 7km northeast) attracted 111,305 visits in 2023 and Fota Wildlife Park and Fota Arboretum and Gardens (c. 2km west) drew 430,024 and 142,872 visitors, respectively. There are multiple more attractions in the wider area such as the Cobh Heritage Centre and Spike Island.
- 4.57 Feedback obtained from Fáilte Ireland from visitors reveal hiking and cross-country walking as particularly popular amongst visitors to the Country as a whole. The economic importance of sustaining the natural environment is evident in the appeal of this type of activity as well as other outdoor pursuits such as cycling, golf, angling and equestrian activities. There are many sports and historical/nature resources in the surrounding area of the application site, which are a resource for locals and visitors alike. Fota Island and Cobh Golf Club are easily accessible and guided tours are available in specified seasons at the historic site of Barryscourt Castle, which has recently been restored by the Office of Public Works (OPW). There are numerous walking trails such as the South and East Cork Bird Trail in the wider area that offer opportunities for exercise and nature connection.
- 4.58 Being situated within the environs of Cork City and within easy reach of the Little Island Industrial area (located c. 5km west), the application site is within a widely important economic area. There are many local enterprises interspersed in the rural area immediately surrounding the application site, such as the oyster farm (Atlantic Shellfish Limited), located to the south. The East Cork Civic Amenity Site, which is situated directly south of the site is an important component of Cork's recycling infrastructure.

6

https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Research/Key%20Tourism%20Facts%20and%20Figures%202024/FI_Key-Tourism-Facts-2024_National-Summary_1.pdf?ext=.pdf

Community Infrastructure

- 4.59 The application site is surrounded by the Cork Harbour estuary to the south and farmland to north. There are a number of residences in the immediate vicinity of the entrance to the existing quarry. In general, the settlement pattern is predominantly dispersed single houses located along the local LP3619 road and other minor public roads. The dwellings closest to the application site are those situated along the L3619 road, north of the application site, the closest of which are c. 80m to the northwest and c. 180m to the northeast. The Atlantic Shellfish oyster farm is situated c. 650m south of the southern boundary. Immediately to the south of the farm is a residential building.
- 4.60 The closest retail outlets, schools and community facilities are located in the nearby town of Carrigtwohill, c. 2km to the north. Fota Island Resort and Wildlife Park is located approximately 2km to the west. The larger town of Midleton provides access to further services c. 6km to the northeast. Cork City is located c. 14km to the west, with access to regional services such as Cork University Hospital and Cork Airport.
- 4.61 Figure 4.1 identifies local receptors within the locality and also shows 500m and 1000m offsets from the application boundary for the proposed development.
- 4.62 As is typical in rural areas, there are various businesses/enterprises interspersed in the region, such as the Southern Fuel & Farm supplies business c. 300m north of the application site, across the L3619 and agricultural holdings in the wider area.

Indices of Deprivation

- 4.63 Pobal is an organisation that works on behalf of Government to support communities and local agencies toward achieving social inclusion and development. The organisation produces mapping information⁷ including on deprivation indices in order to identify areas in need of social/community investment. The overall levels of deprivation have been based on census data in relation to demographic profile, social class composition and labour market situation. According to the deprivation indices based on 2022 census data, Carrigtwohill ED is categorised as marginally above average (i.e. slightly advantaged).

General Health

- 4.64 **Plate 4-7** presents the results of the 2022 census in relation to the self-reported health status of the Small Area and ED residents compared with those within County Cork and the State.
- 4.65 The information presented in Plate 4-7 does not reveal specific health concerns in the local area with over 88% of respondents in Carrigtwohill ED and almost 86% in the Small Area classifying their health as either very good or good, which is higher than the 82.9% reporting this at State level. 86.6% of Cork County residents reported their health status as very good or good.

7

https://data.pobal.ie/portal/apps/experiencebuilder/experience/?id=3b0acba7eb694ffa85340a60f81d516c#data_s=id%3AdataSource_1-18b85a45500-layer-28-18b85a42b18-layer-27%3A5822

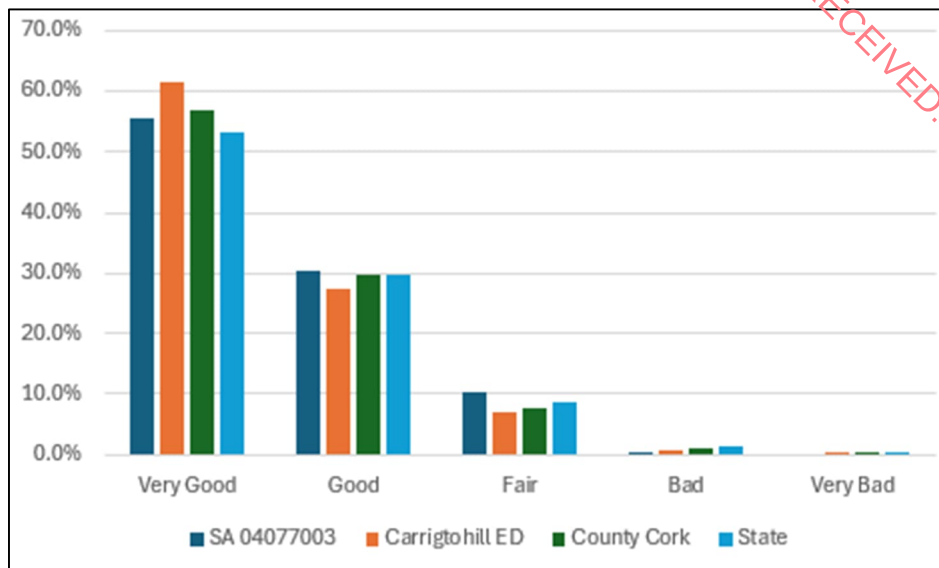


Plate 4-7 Self-reported Health Status of Population

Radon Mapping

- 4.66 The entire application site is within an area mapped by the EPA⁸ as being within the '1 in 5 homes likely to have high radon levels' risk category, and within an area where legal requirements for radon testing of workplaces are in place.

Sensitive Receptors

- 4.67 Dwellings in the vicinity of application site are generally located along the local road network, with some residences located within larger farm holdings, particularly to the east of the application site. The nearest dwellings have been used as representative locations within the technical assessments reported in the other chapters of this EIAR, in order to quantify any potential environmental emissions. In total there are c. 30 residential properties within a 500m radius of the application site., which are indicated on Figure 4-1. The general settlement pattern is indicated between 500m and 1km distance from the application site. In total there are c. 100 residential receptors within the 1km radius.
- 4.68 The baseline information presented in the preceding sections has not identified any particular sensitivities in relation to human health. The deprivation indices in the area do not highlight the area as significantly disadvantaged and self-reported health status is positive and better than the national situation. The scale of community facilities and amenities available to local residents is considered to be in proportion with their rural location. The proposed development, itself, will not introduce new communities to the local area and is not expected to create any additional demand on services.
- 4.69 A further review of Table 4-1 in the context of the baseline population confirms that the main potential for the proposed development to cause negative impacts to human health is through the potential for noise emissions and emissions to air, land and water. These

issues have been addressed in detail in their respective chapters of the EIAR and conclusions in relation to their resulting impact to human health are set out below. The proposed development has potential for a substantial positive influence on the local economy through the enabling of the application site to continue to provide a source of direct and indirect employment. This has potential knock-on effects in terms of contributing to the overall wellbeing of the local population.

IMPACT ASSESSMENT

Evaluation Methodology

- 4.70 The evaluation of effects on employment, human health and amenity comprises a qualitative assessment based on the 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.

Construction and Operation Phases

- 4.71 Given that the proposed development is an extension of existing activities, and that quarrying operations are similar in nature to construction works it is considered appropriate to address both phases as one in this case. The construction of the tunnel underneath the private road will also be similar in nature to existing quarrying activities. Extensive ground disturbance has already been undertaken within the application site during archaeological trenching works (see EIAR Chapter 12).

Population

- 4.72 Given the nature of the proposals which do not introduce any new communities or housing to the area, and that no new workers that will be introduced to the application site during the proposed development, it is considered that there will be negligible impacts to the population make-up.

Employment and Economy

Construction and Operational Stage Impacts

- 4.73 The planning application is for the proposed extension to the existing quarry. The proposed development will provide continued employment of up to 12 people directly on-site, and a number of indirect employees such as crushing contractors, HGV drivers, and maintenance contractors.
- 4.74 The proposed development will contribute indirectly to sustaining and developing the local and regional economy by providing a long-term secure supply of construction aggregates, which are widely acknowledged as being in scarce supply.
- 4.75 This is a long-term and positive impact on employment and economic development.
- 4.76 The diverse economic enterprises that surround the application site (such as the civic amenity site, oyster farm, farm and fuel supply and agricultural businesses) have been co-existing with the existing quarry to this point without adverse effect. The combination of land uses is typical of the rural economy and it is not considered that there will be any additional impact as a result of the proposed extension of the quarry. The construction of an underpass

below the private local road separating the existing and the proposed extension of the quarry will be beneficial in further minimising any potential impact.

Post – Operational Stage Impacts

- 4.77 Following the permanent cessation of operations, the application site will be restored to natural habitat. This would result in the loss of employment at the site in the long term. Some short-term employment would be provided in relation to the aftercare of the restored site.

Communities, Amenities and Tourism

Construction and Operational Stage Impacts

- 4.78 The construction & operational stages of the development relate to tunnel construction and the extraction & processing of rock using industry standard techniques. These stages have the potential to generate impacts that would have effects on amenity through the pathways of air, noise, and water.
- 4.79 It is considered that, following the continued implementation of the existing and proposed mitigation measures as documented in EIAR chapters 7 (water), chapter 8 (air quality) and chapter 10 (noise & vibration) that the construction and operational stage impacts are predicted to be negligible to acceptable.
- 4.80 In addition, the popular tourism attractions and communities in the area have been co-existing with the existing quarry to this point without adverse effect. The construction of an underpass below the private local road separating the existing and the proposed extension of the quarry will be beneficial in further minimising any potential impact.
- 4.81 On this basis, it is considered that there would be no likely significant temporary or permanent effects on amenity during the construction and operational stages of the proposed development.
- 4.82 The potential opportunities offered by funds obtained through any development contributions associated with a planning permission grant, and the opportunities for local sponsorship by Breedon Ireland may contribute to wellbeing events for local people and a contribution to the achievement of the objectives of Healthy Cork and the Healthy Ireland Framework.

Post – Operational Stage Impacts

- 4.83 There will be limited activity on site during restoration works, and the main sources of noise and dust associated with extraction and processing operations will have been removed. Accordingly, this stage will have limited potential to generate impacts that would have effects on amenity through the pathways of air, noise, and water.
- 4.84 Notwithstanding this, with implementation of the mitigation measures as documented in chapter 7 (water), chapter 8 (air quality) and chapter 10 (noise & vibration) the post-operational stage impacts are predicted to be negligible to insignificant.
- 4.85 On this basis, it is considered that there would be no likely significant effects on amenity during the post- operational stage of the proposed development.
- 4.86 The potential use of the restored site for the use of the local and wider community would be subject to contractual arrangements such as ownership and insurance liabilities. This could be an option should Cork County Council wish to take the site into charge at a later date.

Human Health

Construction and Operational Stage Impacts

- 4.87 The construction and operational stages of the development relates to the extraction & processing of stone using industry standard techniques. These stages have the potential to generate impacts that would have effects on human health through the pathways of air, noise, and water.
- 4.88 As outlined in each of Chapters 6, 7, 8 and 10 of this EIAR, a number of mitigation measures are proposed to control and minimise these effects and to ensure that the residual effects of the proposed development on human health during the construction and operational phases are acceptable and not significant. On this basis, it is considered that, with implementation of the proposed mitigation measures, there would be no likely significant temporary or permanent effects on human health during either the construction or operational stages of this development. The landscape and visual assessment has concluded that the proposed development will not result in significant changes to landscape or views.
- 4.89 The technical assessments within the EIAR chapters have concluded that the predicted changes in pollutants are well within statutory standards and guidelines. The potential for non-threshold effects is noted and is considered to be of a very low level over the period of the proposed development; therefore the magnitude is predicted to be low. In accordance with the significance matrix proposed by the IEMA Guide to Determining Significance for Human Health in EIA, therefore, the potential for effects on human health is considered to be minor adverse (not significant). On this basis, it is considered that there would be no likely significant temporary or permanent effects on human health during the construction / operational stage following mitigation.
- 4.90 The site will be operated in line with strict industry controls for health and safety which will ensure that the potential for impacts will be negligible.
- 4.91 There is high radon potential within the area where the existing quarry is located. Radon gas is not considered harmful in the open air and workplace testing is required in indoor or underground locations where workers spend more than 100 hours per year⁹. The EPA (2019) Protocol for the Measurement of Radon in Homes and Workplaces focusses solely on the measurement of indoor radon concentrations and that "it should be noted that outdoor workplaces would not be expected to have elevated radon concentrations and therefore no radon measurements are required".
- 4.92 The main work at the quarry and proposed development takes place outdoors and the access tunnel to the extension area will have passive ventilation. Accordingly, the risk of radon at the site in general is extremely low.
- 4.93 Potable water will continue to be brought to site via water dispensers, hence there is no potential risk to human health from water consumption at the site.
- 4.94 Personal protection equipment (PPE) is provided to all employees in accordance with the requirements set out in the health & safety legislation. Employees are expected to be suitably clothed with hard hats and can be supplied with sunscreen protection to protect against UV exposure. Should climate change impacts result in changed biodiversity to such a degree that the presence of non-native disease vectors such as mosquitos become

⁹ <https://www.epa.ie/environment-and-you/radon/radon-testing/#d.en.82887>

endemic, standard management practices will be developed on a case-by-case basis to eliminate any potential breeding sites and/or implement appropriate barrier protections such as netting. The European Centre for Disease Prevention and Control undertakes surveillance for evolving threats and works with other partners such as the World Health Organisation to communicate responses at the appropriate scale.

- 4.95 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 stages of the proposed development.

Post – Operational Stage Impacts

- 4.96 There will be limited activity on site during restoration works, and the main sources of noise and dust associated with extraction and processing operations will have been removed. Additionally, as the potential for emissions during the construction and operation of the development will have been appropriately managed, this stage will have very limited potential to generate impacts that would have effects on human health through the pathways of air, noise, and water.
- 4.97 On this basis, it is considered that there would be no likely significant effects on human health during the post- operational stage of the proposed development.

Unplanned Events

- 4.98 According to the EPA guidelines, unplanned events, such as accidents, can include “*spill from traffic accidents, floods or landslides 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)*”.
- 4.99 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.
- 4.100 Unplanned events in relation to the proposed development could potentially relate to:
- Instability during the extraction process;
 - Spills from traffic accidents;
- 4.101 The HSA Safe Quarry Guidelines to the Safety Health and Welfare at Work (Quarries) Regulations 2008 As Amended are implemented at the quarry and will limit the potential for unplanned events in the form of instability during extraction. The final restoration will provide for a stable landform restored to natural habitat.
- 4.102 Chapter 7 (Water) notes that accidental spillages or leaks of fuels or chemicals during site activities could happen without proper control and supervision. Appropriate mitigation measures and monitoring are and will continue to be implemented to ensure that there are no potential impacts on the water environment as a result of unplanned events at the site.
- 4.103 The traffic and transport assessment, carried out as part of the EIAR (Chapter 14), indicates that existing road network can accommodate the proposed development. It is considered that the risk of an accident resulting in a spillage from traffic associated with the development 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 very low and any such effects would be temporary.

Cumulative / Synergistic Impacts

- 4.104 The environmental consideration that has the greatest potential for significant cumulative impact on population and human health, and, in particular on amenity, is traffic. This is assessed and discussed in the traffic impact assessment presented in Chapter 14 of this EIAR. The review of potential cumulative projects concluded that there were no planned projects in the vicinity with potential to cause 'in combination' effects and the traffic generation associated with the development is unlikely to give rise to significant impact upon the carrying capacity of the road network. The traffic assessment took into account potential traffic associated with the construction and operation of the permitted, but not yet constructed, ground limestone plant. This was considered to be a conservative assessment.

Transboundary Impacts

- 4.105 By virtue of its location a significant distance from any international boundaries, and its low potential for large-scale emissions, it is not anticipated that the impacts of the proposed development would have any transboundary effects on population and human health.

Interaction with Other Impacts

- 4.106 The effects of the proposed development on population and human health and the interaction with other environmental topics is covered in the relevant EIAR chapters i.e. Chapter 7 – Water; Chapter 8 (Air Quality) and Chapter 10 (Noise & Vibration).

'Do-nothing Scenario'

- 4.107 If planning permission is not approved for the proposed development, the application site would remain in its current state, with disturbed ground in the agricultural portion remaining from archaeological test trenching and the south of the site would continue to be used as the settlement lagoon and infiltration area for the existing quarry, until final restoration of that site.
- 4.108 The employment from the existing quarry, and indirect economic benefits, would be lost when the reserves there were depleted, and the aggregate reserves underlying the application site could not be recovered to meet the scarcity of supply for infrastructure and housing construction.
- 4.109 A 'do-nothing scenario' would likely result in a net adverse impact in relation to human health & population, as the assessments set out within this EIAR did not identify unacceptable impacts on human health as a result of the proposed construction and operation of going ahead with the proposed development.

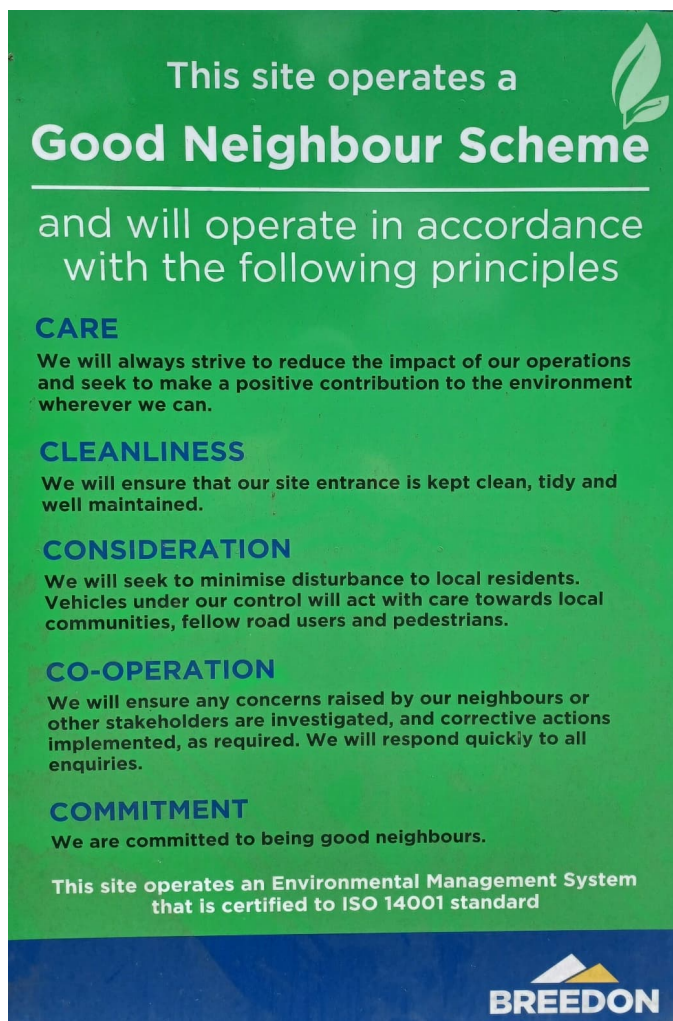
MITIGATION MEASURES

Construction and Operational Stages

- 4.110 There are a range of existing management and mitigation measures implemented at the existing quarry. These measures will continue to be implemented for the proposed

development to minimise the impact on surrounding sensitive receptors in relation to water, air, noise and vibration, landscape and traffic. These measures relate primarily to avoidance, prevention and reduction and are discussed in the relevant chapters of the EIAR.

- 4.111 The existing and proposed management and mitigation measures are identified in the respective chapters of this EIAR to which they relate. The adherence to these measures, many of which will be subject to planning condition and monitoring requirements from Cork County Council, will ensure that the potential for impacts on human health and population is minimised as far as possible.
- 4.112 An EPA registered radon tester can be engaged to undertake radon testing on the quarry buildings and advise on appropriate protection measures should they be required.
- 4.113 In addition, the Applicant is committed to following up on all issues raised and fostering good relationships with neighbours and the company has in place a “Good Neighbour Scheme”. A site notice (shown on **Plate 4-8** below) is positioned at the site entrance providing a commitment to its openness to engage with and support the local community and to ensure that any concerns from them are given appropriate consideration and response.



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Plate 4-8 Example of Good Neighbour Site Notice

- 4.114 Breedon Ireland has established an environmental management system (EMS) designed to comply with the environmental requirements of the ISO 14001:2015 standard, refer to EAIR Chapter 2 for further details. The EMS will be updated in accordance with any new planning consents for the proposed development. The EMS has a Complaints procedure which commits to the logging of complaints, assignment of responsibility for action and measures taken to address these and recording of follow up communication with complainants.
- 4.115 The development is also controlled and regularised in accordance with the scheme as outlined in the EIAR, through continued environmental monitoring and by the planning conditions imposed by the Planning Authority.
- 4.116 Breedon Ireland proudly supports many local sports clubs in the areas where they operate.

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RESIDUAL IMPACT ASSESSMENT

Construction and Operational Stages

- 4.117 With implementation of the management & mitigation measures detailed above there will be no residual impacts on population and human health arising during the construction and operational stages of the development.

Post – Operational Stage

- 4.118 The post-operational stage impacts will be negligible to insignificant and no specific mitigation measures are required. There will be no residual impacts on population and human health arising during the post-operational stage.

MONITORING

- 4.119 There is an existing environmental monitoring programme in place at the quarry (refer to EIAR chapters 7 (Water), 8 (Air Quality) and 10 (Noise & Vibration)) and this will be continued for the proposed development. There is no other monitoring required in relation to population & human health.

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REFERENCES

Central Statistics Office (2022) Census Data 2011, 2016 and 2022.

Cork County Council - Cork County Development Plan 2022-2028.

IEMA (2022) Determining Significance for Human Health in EIA.

IEMA (2022) Effective Scoping of Human Health in EIA.

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

Planning and Development Act, 2000 (as amended).

Planning and Development Regulations, 2001 (as amended).

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FIGURES

