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POPULATION AND HUMAN HEALTH



3 POPULATION AND HUMAN HEALTH

3.1 INTRODUCTION

This chapter of the rEIAR was prepared by Cunnane Stratton Reynolds, Landscaping and Planning Consultants. This chapter has regard to the other inputs to this rEIAR and the application, and in particular the following chapters addressing Ecology and Biodiversity (Chapter 4.0); Land, Soils and Geology (Chapter 5.0); Water (Chapter 6.0); Air Quality (Chapter 7.0); Climate (Chapter 8.0); Noise and Vibration (Chapter 9.0); and Landscape and Visual (Chapter 11.0).

Population and Human Health comprise an important aspect of the environment to be considered. Any significant impact on the status of human health, which may be potentially caused by a development, must therefore be comprehensively addressed. Population and Human Health is a broad ranging topic and addresses the existence, activities and wellbeing of people as groups or 'populations'.

Construction and operational related impacts from the subject development in relation to Traffic and Transport have been addressed in Chapter 12.0 of this rEIAR, (Traffic and Transport). Impact in relation to other built services, (such as electricity, telecommunications, water supply and foul water capacity) have also been addressed in Chapter 13.0, (Material Assets). It should be noted that during the assessment period (i.e. from 19th September 2020) there has been no construction on site and therefore no assessment 'during the 'construction phase' can be undertaken.

The assessment in combination with the relevant sections presented above proposes mitigation measures, as appropriate, to reduce the significance of adverse impacts from the substitute consent development.

The existing environment is considered in this section under the following headings:

- Economic Activity
- Social Patterns;
- Land Use and Settlement Patterns;
- Employment;
- Health & Safety; and
- Risk of Major Accidents and Disasters.

3.1.1 PROJECT BACKGROUND AND OVERVIEW

Characteristics of the Subject Development

Consideration of the characteristics of the subject development allows for an assessment of the level of impact on any particular aspect of the environment that would have or continues to arise for the subject substitute development. In this chapter the impact on population and human health is assessed. A full description the subject of the substitute consent application is provided in Chapter 2 of this rEIAR.

Study area

The study area defined for the population and demographic trends contains the Electoral Divisions (EDs) of Rathmore and Newtown, shown in Figure 3-1 below within which the townlands of Redbog, Philipstown and Athgarrett and located. An assessment of residential receptors has been made

within a 500 m radius of the substitute consent application boundary. A total of 25 No. existing residential dwellings were found to be within 500 m of the site boundary. One further dwelling was noted to have been granted planning permission, however building was yet to commence at the time of this assessment; nevertheless this has been included in the assessment. Of the 25 residential receptors identified, 7 No. residential receptors are located within 250 m of the site boundary. The number of residences is based on a field survey, a review of the aerial photography, DCCA Eircode mapping and a local authority planning permission search.

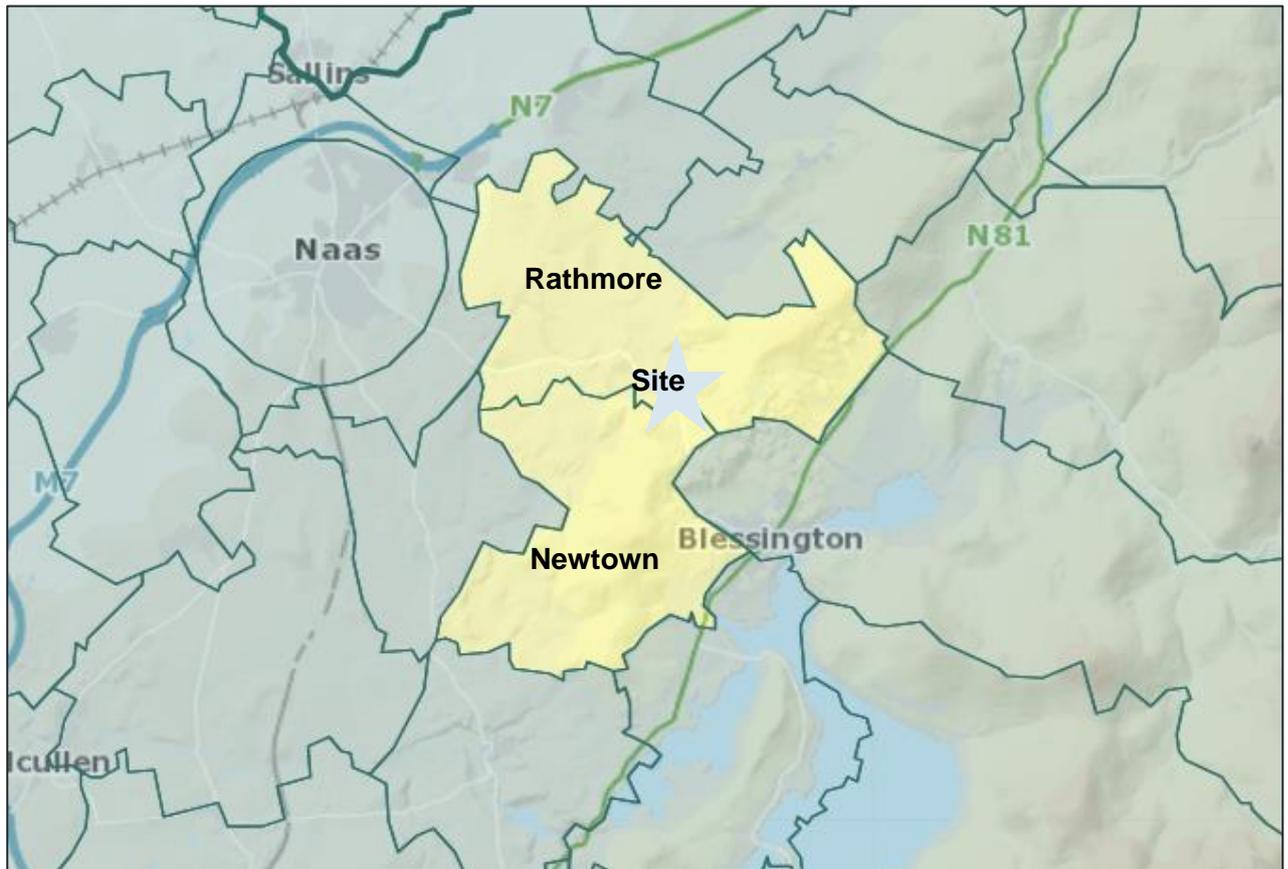


Figure 3-1 - Electoral Divisions which the application site is located within

3.2 METHODOLOGY

At the time of writing there is no specific guidance from the EU Commission on the 2014 EIA Directive to indicate how the new term 'Human Health' should be addressed. Therefore, this chapter of the rEIAR document has primarily been prepared with reference to recent national publications which provide guidance on the 2014 EIA Directive including the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) and the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, published by the EPA in May 2022.

The preparation of this chapter has also had regard to the guidance published by the European Commission in 2022 on the preparation of EIARs (taking account of the changes introduced under the 2014 Directive). The European Commission guidance states the following in relation to the assessment of Human Health:

“In an EIAR, the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under the environmental factors of air, water, soil etc. The Advice Notes provide further discussion of how this can be addressed”

In accordance with this approach to Human Health espoused in the Commission Guidance, this chapter addresses human health in the context of other factors addressed elsewhere in further detail within the rEIAR where relevant. Relevant factors identified include inter alia water, air quality, noise, and the risk of major accidents and disasters. The insight provided by the Institute of Environmental Management and Assessment (IEMA) high level primer document (2017) has also been considered in the preparation of this chapter. The IEMA document posits that human health spans environmental, social and economic aspects and does not merely represent an absence of disease. A broad conception of human health is put forward, that should encompass factors such as local economy and community, rather than relying on a narrower focus on biophysical health factors and determinants. 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 land-use. The 2018 EIA Guidelines published by the DHPLG state that there is a close interrelationship between the SEA Directive and the 2014 EIA Directive. The Guidelines state that the term ‘*Human Health*’ is contained within both of these directives, and that a common interpretation of this term should therefore be applied. To establish the existing receiving environment / baseline, several site visits were undertaken to appraise the location and likely and significant potential impact upon human receptors of this substitute consent development. A desk-based study of published reference documents such as Central Statistics Office Census data, the ESRI Quarterly Economic Commentary, the Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly 2019, the Kildare County Development Plans 2017 - 2023 and 2023 - 2029 were also considered in preparing this rEIAR as both statutory plans straddle the period of substitute consent sought.

It should be noted that there are numerous inter-related environmental topics described throughout this rEIAR document which are also of relevance to Population and Human Health. Issues such as the potential likely and significant impacts of the substitute consent development on townscape and visual impact, daylight and sunlight, archaeology and cultural heritage, air quality and climate, noise and vibration, water, land and soils, microclimate, material assets including traffic and transport impacts, are of intrinsic direct and indirect consequences to human health. For detailed reference to particular environmental topics please refer to the corresponding chapter of the rEIAR and other accompanying substitute consent application reports and drawings. The Guidelines on the information to be contained in environmental impact assessment reports, published by the EPA states that *‘in an EIAR, the assessment of impacts on population & human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g. under the environmental factors of air, water, soil etc.’* This chapter of the rEIAR document focuses primarily on the potential likely and significant impact on population, which includes human beings, and human health in relation to health effects/issues and environmental hazards arising from the other environmental factors. Where there are identified associated and inter-related potential likely and significant impacts which are more comprehensively addressed elsewhere in this rEIAR document, these are referred to. The reader is directed to the relevant environmental chapter of this rEIAR document for a more detailed assessment.

Information for the assessment of potential impacts on populations and human health was obtained by means of a desk-based review, and included the following sources:

- Census Returns (Central Statistics Office (CSO), 1991, 1996, 2002, 2006, 2011, 2016 and 2022 Census);
- Kildare County Development Plans 2017 – 2023 and 2023 - 2029;
- The Eastern and Midlands Regional Assembly (EMRA) Regional Spatial and Economic Strategy (RSES) 2019-2031;
- Department of Health, Key Trends in Ireland, 2022;
- Field surveys of the Application Site;
- Department of Communication, Climate Action and Environment (DCCA) Eircode maps; and
- Aerial and ordnance survey maps of the area.

3.3 EXISTING ENVIRONMENT

The site is located in the east of Co. Kildare, immediately west of the border with Co. Wicklow, and ca. 1.8 km northwest of Blessington and ca. 7.5 km northeast of Naas. The lands surrounding the site to the north and west can be characterised as rural in nature, with land uses in the area being agricultural and single-house residential. Glen Ding Woods are located on lands further to the southwest, and can be characterised as forestry and a semi-natural area. Quarrying and aggregate extraction are widely practiced in the adjacent lands to the east and south. The sand and gravel pits in the Blessington area are an important and strategic source of sand and gravel used in the production of construction material for the Greater Dublin Region.

Figure 3-2 below shows the immediate context of the application site in the context of surrounding uses. The surrounding uses include forestry and woodlands to the south west, agriculture to the north, quarry activity to the south and east along with residential development to the north and east in particular.

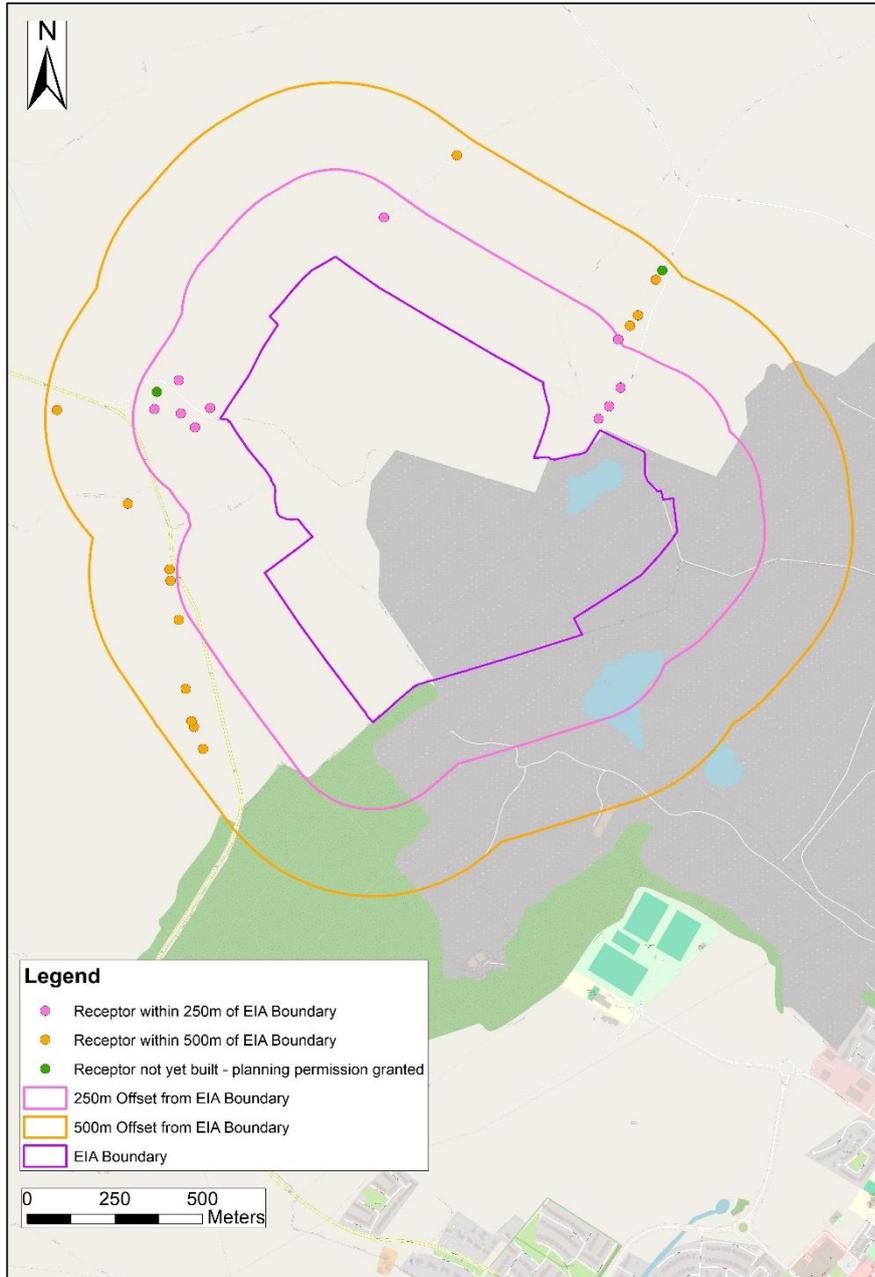


Figure 3-2 - Receptors within 250m and 500m of the EIA boundary

3.3.1 THE EXISTING RECEIVING ENVIRONMENT (BASELINE SITUATION)

A description of the relevant aspects of the current state of the environment (baseline scenario) in relation to population and human health is provided below. Specific environmental chapters in this rEIAR provide a baseline scenario relevant to the environmental topic being discussed. Therefore, the baseline scenario for separate environmental topics is not duplicated in this section; however, in line with guidance provided by the European Commission, the EPA and the DHPLG, the assessment of impacts on population and human health refers to those environmental topics under which human health effects might occur, e.g. noise, water, air quality etc. An outline of the likely evolution without implementation of the project as regards natural changes from the baseline scenario is also provided. This is the “Do Nothing” scenario.

3.3.2 BASELINE – POPULATION

Population Growth

Table 3-1 below summarises population statistics for the State, Kildare and the Rathmore and Newtown EDs. The percentage population increase has been calculated between the Census periods of 2006 to 2011, 2011 to 2016 and 2016 to 2022. Generally consistent increases in population were observed in the State, Kildare and the Electoral Division areas over the Census periods of 2006 to 2022 with subsequent lower rates of population increase observed in the period of 2011 to 2016. The population of Rathmore ED decreased slightly over the Census periods of 2011 to 2022. During these periods, the population increased in the county, regionally and nationally. Population increase in Newtown was experienced over the same period.

Table 3-1: Population statistics for the State, Co. Kildare and the Rathmore and Newtown Eds (CSO)

	2006	2011	2016	2022
Ireland	4,239,848 (+8.11%)	4,588,252 (+7.82%)	4,761,865 (+3.78%)	5,149,139 (+8.12%)
Kildare	186335	210312 (+13%)	222504 (5.8%)	247774 (+11.4%)
Rathmore ED	N/A	1169	1142 (-2.3%)	1139 (-0.26%)
Newtown ED	N/A	920	941 (+2.3%)	1035 (9.9%)

Over the 6 year period to 2022 which is during the period that substitute consent will apply (i.e., after September 2020 the growth in population in Newtown ED exceeded by a small rate the population growth across the whole State but was less than the rate of growth across the whole county. The population of Rathmore experienced marginal decline. The population of Newtown ED increased by 94 persons in the 2016-2022 period suggesting that there may have been new housing development in the area in that period.

Population Age Distribution

Table 3-2: Population Age Distribution, 2011 and 2016 (CSO)

Year	Area	% Person aged 0-14	% Person aged 15-29	% Person aged 30-44	% Person aged 45-64	% Person aged 65+
2011	State	21.3	32.5	23.7	22.7	11.7
2016	State	21.1	18.4	23.3	23.8	13.4
2011	Kildare	24.5	20.2	25.8	21.6	7.9
2016	Kildare	24.1	18.1	24.8	23.2	9.9

2011	Rathmore ED	25.2	19.6	17.2	29.5	8.5
2016	Rathmore ED	20.4	18.3	17.1	32.8	10.9
2011	Newtown ED	28.2	15.6	29.4	20.5	6.3
2016	Newtown ED	28.4	14.0	27.5	21.3	8.8

Table 3-2 summarises population distribution across the key age cohorts for the State, Leinster, Co. Kildare and the Rathmore and Newtown EDs. Rathmore has an age profile that is greater in the 15-29 age group than in either the State, the county or in comparison with Newtown ED. Newtown has a greater proportion of its population in the youngest cohort 0-14, less in the 15-29 age group, more in the 30-44 age group, and less over 45 years old. A typical age scenario in Newtown ED for the year 2016, which is the last year for which there are census records on age, is one of households or families with parents in the 30-44 age group and children more likely in the 0-14 age group.

Population densities have also between the Census periods of 2002 to 2006, 2006 to 2011 and 2011 to 2016, as the 2022 figures are not yet available. Population densities also increased in the State, province and county areas in the period to 2016. The population density of Rathmore ED increased from 42.4 persons per km² in 2006 to 47.8 persons per km² in 2011, whereas the density of the Newtown ED increased from 23.2 to 41.2 during the same period. This increase in density in this period as noted above could be attributed to the development of a housing estate within the Newtown ED during this time. The population density of the Rathmore and Newtown EDs are still lower than that observed in the county, regionally and nationally, which reflects the rural nature of these EDs.

3.3.3 BASELINE - EMPLOYMENT

National Employment

The CSO's Quarterly Labour Force Survey (which has now replaced the Quarterly Household Survey) for Q2 2023, which is the latest available, indicates that the employment rate for persons aged 15-64 years was 74.2% in Quarter 2 2023, which was the highest rate recorded since the surveys began in 1998. The number of persons aged 15-89 years in employment increased by 88,400 or 3.5% to 2,643,000 persons in the year to Q2 2023.

Local Employment Centres

As previously described, the application site is situated adjacent to the Kildare-Wicklow border, north-west of the N81 national road. The site is in close proximity to the towns of Blessington and Naas. The site is also well positioned to serve the greater Dublin area and its location in a regional context has continued influence on the economic activity of the area. Public transport linkages and the N81 road provide vital compact connections and strengthen the area's status as a centre for economic investment and activity, and as a commuter zone. Using the N81 road, Dublin city centre is approximately 50 minutes away by car, while Blessington can be reached in less than 5 minutes. Naas is approximately a 20 minute drive using the R410 road. Such ease of access increases the attractiveness of the site as a source of high value aggregate to meet the demands of the region. The ease of access also makes the area an ideal location for commuters.

3.3.4 BASELINE - AMENITY

The immediate area surrounding the application site is primarily used for quarrying and agriculture, and therefore has limited amenities. A large proportion of public amenities, recreational clubs/areas, and areas of tourism value in the vicinity of the site are concentrated in and around the town of Blessington. Some of these main areas have been identified and are described below. Blessington acts as a gateway to the north-western part of the Dublin and Wicklow Mountains, providing a wide range of accommodation and food services.

Sport and recreational grounds within the vicinity the site include the Blessington Association Football Club, which is located approximately 700 m east of the site; and the Blessington Gaelic Athletic Association Club which is located approximately 1 km to the south. The Poulaphouca Reservoir (Liffey Lake) is located east of Blessington, ca. 2.2 km south-east of the site. It offers opportunities for sports and recreation with the Three Castles Rowing Club and The Avon Activity Centre. It also acts as an attractive area for walking and mountain biking along tracks such as the Blessington Greenway.

There are two formal gardens open to visitors, June Blake's Garden and Hunting Brook Gardens, approximately 4.2 km north-east of the site, respectively. June Blake's Garden also offers holiday accommodation on-site. The clubs and amenities presented above are utilised by the wider east Kildare and west Wicklow communities and not just limited to the local population of the surrounding area.

3.3.5 BASELINE - LAND USE

The application site is approximately 71.9 ha in area within an EIA boundary area of 95.8ha. The site comprises lands which are currently used for quarrying activities and are classified (Level 3) in Corine Landcover (EPA, 2018) as 'Mineral Extraction Sites'. The lands to the north and west are defined as 'Agricultural areas' and 'Pastures'. The lands surrounding the site to the north and west can be characterised as rural in nature, with land uses in the area being agricultural and single-house residential. Glen Ding Woods located on lands further to the southwest are defined as forestry and a semi-natural area. Quarrying and aggregate extraction are widely practiced on adjacent lands to the east and south. The boundaries of the lands owned by the Applicant comprise hedgerows and areas of scrub. There are a number of one-off residential properties located in the vicinity of the site, primarily concentrated to the west, north and east of the site.

There are no waste licenced or IE/IPC Licenced facilities within 1 km of the subject development. Within 5 km of the site, there are seven EPA regulated activities:

- Dillonsdown (waste facility; EPA Waste Licence No. W0080-01), adjacent lands to the south-east;
 - Roadstone Dublin Remediation Landfill (surrendered waste facility; EPA Waste Licence No. W0213-01), ca. 700 m south-east;
 - A.B. Group Packaging (IPPC Licence No. P0197-02), ca. 2.7 km south;
 - Blackhall Soil Recovery Facility, (waste facility; EPA Licence No. W0247-01), ca. 3.0 km east;
 - Glassco Recycling Ltd (waste facility; EPA Waste Licence No. W0279-02), ca. 3.0 km north;
 - Walshestown Restoration Ltd (waste facility; EPA Waste Licence No. W0254-01), ca. 3.8 km east; and
 - Arthurstown Landfill (waste facility; EPA Waste Licence No. W0004-04), ca. 3.8 km north-west.
- Within 5 km of the site, there are four consented Section 4 discharges:
- Scoil Cheile Christ National School, S4033-15, ca. 1.3 km north-west;



- Scoil Cheile Chriost National School, S4033-15(b), ca. 1.3 km north-west;
- Breton Rocrete WPL/60, ca. 3.6 km north-east; and
- Teehill Management Company Ltd, WP218/05, ca. 4.9 km north-east.

There are no upper or lower tier SEVESO sites within 5 km of the subject development. The closest SEVESO site is Johnston Logistics Ltd, which is an upper tier SEVESO site and is located approximately 8.5 km to the north of the subject site.

Demographic and Development Pattern

The applicant proposes to continue quarry activities as permitted under KCC Reg. Ref. 07/267 with some modification. There is a separate S37L application for prospective quarry applications to extend the extraction of sand and gravel in a northerly direction from the existing quarry void. The total application area is ca. 71.9 ha and includes ancillary processing plant and welfare facilities. For the purposes of the rEIAR and the overall environmental assessment of the operation this site includes an area of ca. 0.23 ha that was the subject of a previous planning application for retention of a maintenance shed under KCC Reg. Ref. 19/1230.

3.3.6 BASELINE - HUMAN HEALTH

Table 3-3 below summarises the general health of persons by percentage for the State, Co. Kildare and the Rathmore and Newtown EDs at the time of the 2016 census (which are the latest census figures available for health). In the 2016 Census there was a greater percentage of persons in the Rathmore ED (93.5%) and Newtown ED (92.2%) who classified themselves as being in 'Good' or 'Very Good' health in comparison with the average for the State (87.0%).

The percentage of persons who classified themselves as being in 'Bad' or 'Very Bad' health in the Rathmore and Newtown EDs (0.9% and 1.0%, respectively) was lower than those in the State and Co. Kildare (1.6% and 1.3% respectively). This would indicate a relatively healthy local population as a general position on health in close proximity to the subject site.

Table 3-3: General health percentage of the population (CS0)

General Health	State(%)	Co.Kildare (%)	Rathmore ED (%)	Newtown ED (%)
Very good	59.4	63.1	68.1	70.0
Good	27.6	26.4	25.4	22.2
Fair	8.0	6.8	4.4	5.0
Bad	1.3	1.1	0.6	0.8
Very bad	0.3	0.2	0.3	0.2
Not stated	3.3	2.3	1.2	1.8

Health and Safety

Hudson Brothers Ltd are committed to health and safety at their operations. The Site Manager is responsible for safety and management on site. That person is also responsible for the working environment, traffic management, emergency procedures, first aid arrangements and safe systems



of work. There is no record of any significant accident or incident affecting, or potentially affecting the health or safety of the area, although there was one personal injury reported to the Health and Safety Authority (the HSA) in early 2023. Enhanced safety measures have been implemented since then to prevent or limit such occurrences happening again. In summary, the HSA has not indicated any health issue in this area from September 2020.

3.4 POTENTIAL IMPACT OF THE SUBJECT SUBSTITUTE CONSENT DEVELOPMENT

Introduction

This section provides a description of the specific, direct and indirect, impacts that the subject development may have during the construction and operational phases of the subject development. There is no demolition proposed or experienced as part of the subject development. As stated, guidance documents from the EPA, the European Commission, and the Department of Housing, Planning and Local Government outline that the assessment of impacts on population and human health should focus on the health issues and environmental hazards arising from the subject development. A wider consideration of human health effects which do not relate to the factors identified in the EIA Directive is not required. Additionally, this section addresses the population and socioeconomic impacts of the subject development.

For a more detailed assessment of potential impacts associated with other environmental factors, please refer to specific chapters of the rEIAR which assess the environmental topics outlined in the EIA Directive.

3.4.1 3.4.1 POPULATION

Potential impacts from the subject development may include nuisance from noise, vibration, dusts, landscape and visuals impacts, and impacts to groundwater and surface waters. The potential extent of these will be limited to the local community in the region of the site. These potential impacts have been assessed in the respective chapters of: Soils and Geology (Chapter 5.0), Water (Chapter 6.0), Air Quality (Chapter 7.0), Climate (Chapter 8.0), Noise and Vibration (Chapter 9.0); and Landscape and Visual (Chapter 11.0).

Traffic has the potential to impact receptors at a greater distance from the site. However, given the road infrastructure surrounding the site this is assessed to be imperceptible and medium-term. The effects of these impacts have been assessed in the Traffic and Transportation chapter, (Chapter 12.0).

Employee numbers associated with the subject development will be maintained from the existing permitted development under Reg. ref. 07/267. These are ca. 46 full-time staff and a further ca. 26 contract truck drivers; however the number of workers may fluctuate depending on market demands. Local population growth due to workers migrating to the local area is not anticipated as the current employment levels are to be maintained. Therefore, any potential growth in local population attributable to the subject development is deemed to be negligible. It is considered that there has been, and there is, no impact on other population factors such as population age distribution, population density, household composition or commuting patterns as a result of this substitute consent development.

Commuting

Table 3-4 summarises the commuting times per person aged 5 years or over to work, school or college for Co. Kildare and the Rathmore and Newtown EDs. The statistics have been calculated for the Census periods 2016 and 2022. It is considered that the vast majority of persons who commute for greater than $\frac{3}{4}$ of an hour are travelling towards Dublin and the greater Dublin area. This was approximately 24% within the Rathmore ED population in 2016 and 20.5% in 2022. For the Newtown ED, this was approximately 27.5% in 2016 and 22.4% in 2022. This is higher than commuting times for Co. Kildare as a whole during the same period (2016 – 21.6%; 2022 – 20.8%). The marginally higher percentage of persons commuting for longer times may indicate a greater proportion of persons travelling towards Dublin and the greater Dublin area. It should be noted that a significant number of employees and sub contractors live locally.

Table 3-4: Commuting times for percent of people (aged 5 years and over) in Co. Kildare and Rathmore ED, (CSO)

Journey Time	Kildare 2016 (%)	Kildare 2022 (%)	Rathmore ED 2016 (%)	Rathmore ED 2022 (%)	Newtown ED 2016 (%)	Newtown ED 2022 (%)
< 15 mins	28.8	26.3	28.5	26.1	29.0	30.6
$\frac{1}{4}$ hour – under $\frac{1}{2}$ hour	27.3	27.2	22.1	27.0	20.7	21.9
$\frac{1}{2}$ hour – under $\frac{3}{4}$ hour	16.7	17.5	20.6	21.9	19.4	19.5
$\frac{3}{4}$ hour – under 1 hour	7.6	7.7	10.6	8.2	12.3	10.8
1 hour – under 1 $\frac{1}{2}$ hours	10.7	9.7	9.8	9.8	11.2	9.1
1 $\frac{1}{2}$ hours and over	3.3	3.4	3.6	2.5	4.0	2.5
Not stated	5.6	7.9	4.8	4.4	3.3	5.3

It is considered that there has been a significant positive impact on job retention in the area over the subject period.

Mitigation Measures

Nuisance to the local population from noise, vibration, dusts, landscape and visual impacts, and impacts to groundwater and surface waters did not, and does not occur, and does not require mitigation during the operation of the subject development from the expiry of the 07/267 consent to the current day. Specific mitigation measures and best practices have been discussed in the respective chapters of this rEiAR, (Soils and Geology (Chapter 5.0), Water (Chapter 6.0), Air Quality (Chapter 7.0) and Climate (Chapter 8.0), Noise and Vibration (Chapter 9.0); and Landscape and Visual (Chapter 11.0). A revised Environmental Management System (EMS) will be developed for the site in line with further conditions resulting from the grant of planning permission for the subject

site. The revised EMS shall provide provisions for the mitigation of nuisance and the management of the site in respect to the local environment and local population for current impacts.

Residual Impacts

With the successful site management and the implementation of the EMS it is anticipated that there will be no significant residual nuisance impacts on the local population of the subject development either on its own or in combination with other developments including any other quarries operating in the area.

3.4.2 EMPLOYMENT

The subject development will extend the life of the operation from the expiry of 07/267 to the current day, whilst proposing to maintain the current level of direct employment at the site, with circa 46 full-time staff and circa 26 contract truck drivers utilising the site, depending on market conditions. In addition, the site will create indirect employment through roles such as site service contractors and additional contract truck drivers, depending on market conditions. Stripping of overburden, excavation and screening of materials, and restoration will take place on a phased basis, however, these can potentially be carried out at irregular intervals and will be dependent on market demands and weather conditions.

The application site has been providing aggregates to construction sites in the Greater Dublin Region over many years which also leads to further indirect employment. It is therefore considered that the operation of the application site has had, and is having, a 'positive' and 'slight' effect on economic activity in the area and the Greater Dublin Region.

Mitigation Measures

No mitigation measures relating to the economic factors are required for the current or past operation of the subject substitute consent development.

Residual Impacts

It is considered that there has been, and are, no residual impacts in relation to employment resulting from the subject development either on its own or in combination with other developments in the area including existing quarry operations in the area.

3.4.3 AMENITY

As noted, factors such as air quality, noise nuisance, vibration, traffic and landscape and visual can affect the amenity of an area. These items have been assessed in dedicated impact assessments in their respective chapters of this rEIAR. Given that any existing facilities and amenity hubs in the vicinity of the site have developed in recent years while quarrying at the application site (and other sites) has been ongoing over a period since at least the 1950's, it is unlikely that the subject continuance of activities at the site from 2020 (from the expiry of the 2007 permission in September 2020) to the current day will have impacted on the tourist potential of the local area. Further information regarding landscape and visual impact and mitigation measures is included in Chapter 11.0 (Landscape) of this rEIAR. A considered distribution and design of perimeter embankments coupled with an increased programme of planting (with native species) will consolidate the existing screening of receptors and the subject development. Consequently, it is concluded that the development has had an imperceptible impact on tourism and recreation in the area and as long as

screening berms and areas of planting are retained in place and maintained, has, and will have, no significant impact on amenity.

Particular previous interest was focused on the impact of quarrying on Glen Ding Woods. The Glen Ding Woods are located to the south-west of the existing extraction area. These woods are an amenity area for the local community and contain a number of nature walking and cycling trails. An assessment of potential dust impacts on Glen Ding Woods has been documented in the Chapter 7 (Air Quality) following the Institute of Air Quality Management (IAQM; 2016) Guidance on the Assessment of Mineral Dust Impacts for Planning. This assessment identifies that the magnitude of dust effects on the Glen Ding Woods as a 'negligible effect'. In-situ baseline monitoring was also undertaken to assess existing impacts of dust south east of the quarry.

These results have been provided in Chapter 7 and are below the recommended dust deposition emission limit value (when using the Bergerhoff method) of 350 mg/m² /day. This area will be monitored monthly as part of the HBL Environmental Monitoring Program. An assessment of predicted noise impacts on the amenity of the Glen Ding Woodland has been included in Chapter 9 (Noise and Vibration).

From the assessment it was evident that levels are below the limiting value, (55 dB(A)) for the application site and below the level which would be considered acceptable within an outdoor amenity area (in accordance with BS8233, (Guidance on sound insulation and noise reduction for buildings – outline guidance on noise matters and deals specifically with noise within buildings)). It is therefore considered that noise from activities within the application site will have a 'not significant' impact on the amenity of the Glen Ding woodland. Given the nature of the Glen Ding Woods, the forestry itself provides a visual screening to the development from its internal walking and cycling trails.

It is noted that visual impacts from developments such as quarries can effect amenity woodlands when the developments are visible from the peripheral walking trails. However, there are no defined perimeter trails in the Glen Ding Woods bordering the site or the site's proposed extension area. As identified in Chapter 11 (Landscape and Visual), the Applicant has proposed to construct screening berms which will be located around the perimeter of the site and will be left intact for the life of the quarry (and in perpetuity to continue to provide biodiversity to the site and the local environment). This includes screening berms to the south-west of the development bordering the Glen Ding Woods. Coupled with the natural screening of the woodland itself, it is considered that these mitigation measures (and the increased visual screening on the quarry perimeter as the planting matures) result in 'imperceptible' visual impacts from the Glen Ding Woods.

Mitigation Measures

Nuisance to the local amenity and recreation areas from noise, vibration, dusts and traffic is mitigated during the operation. Specific mitigation measures and best practices have been discussed in the respective chapters of this rEIAR, Air Quality (Chapter 7.0), Climate (Chapter 8.0), and Noise & Vibration (Chapter 9.0) and Material Assets (Chapter 12.0). As noted previously, an EMS has been used for the environmental management for the development over the assessment period of September 2020 to the current day. This provides mitigation of nuisance and the management of the site.



Residual Impacts

With the implementation of appropriate operational management practices and the mitigation measures identified in this rEIAR it is considered that residual impacts are considered to be not significant.

3.4.4 LAND USE

The existing operational quarry has been in use since the early 1950's. Quarrying activities on the lands have been operated since then by various parties including members of the Hudson family. Quarrying activities in the vicinity of the site have gradually increased in the subsequent years and the local area is very well known for quarrying. With respect to social considerations, there has been little or no change to local activities as a result of quarrying activities in the vicinity of the site since operations began and in particular over the period of September 2020 to the current day, with the mainstay of local activities being agriculturally based and one-off low density residential housing. Therefore, as quarrying is an established practice, the continuation of extraction activities will have an 'imperceptible' effect on social considerations compared with the current dynamics (an effect capable of measurement but without significant consequences).

It is important to acknowledge that aggregate resources can only be worked where they naturally occur. The subject continuance of activities does incorporate an additional land take from surrounding agricultural lands for extractive use, however agricultural lands are widely available in the locality. There is no loss of agricultural land from the operation of the land the subject of this substitute consent application from expiry of 07/267 in September 2020 and what continued as a quarry through to the present day.

Mitigation Measures

As identified previously, specific remedial mitigation measures and best practices have been discussed in the respective chapters of this rEIAR. There are no specific remedial mitigation measures identified in relation to Land Use.

Residual Impacts

With the implementation of appropriate environmental management practices and the mitigation measures identified in the rEIAR it is considered that the likelihood of residual impacts to land use is considered to be not significant.

3.4.5 HUMAN HEALTH, AND HEALTH AND SAFETY

Human Health

Potential impacts to human health from the effects of the subject development to the environment surrounding the site include discharges to the underlying groundwater. This could result in a change in water quality depending on the activities that are undertaken. There is the potential for impacted underlying groundwater to migrate to local groundwater wells and effect the users of such water supplies.

Potential impacts to human health from the impacts to air include dust generating activities on the site and increase in concentrations of airborne particles and nitrogen dioxide due to exhaust emissions from diesel powered vehicles and equipment used on-site and vehicles accessing the site. Blasting was not undertaken on the Site during the assessment period of September 2020 to the present day. Impacts to human health from excess noise and vibration on-site has potential to

result in hearing loss and various vibration syndromes of workers from high level occupational exposure and also annoyance and effects on mental health in the surrounding residential receptors. Good environmental practice for water, air, and noise and vibration management have been undertaken from 2020 to the current time, specified in Chapters 6.0 (Water), Chapter 7.0 (Air Quality), and Chapter 9.0 (Noise and Vibration) of this rEIAR. Mitigation measures are detailed in the EMS and followed during the operation of the site from expiry of 07/267 in 2020 to the current period.

3.4.6 WATER

A major concern in general and in health terms for local residents was the impact of development under 20532 on nearby residents. A total of eight groundwater monitoring wells are currently used to monitor groundwater quality and levels across the site. Three of the wells are historical and the others were installed in 2019, 2020 and 2023 to replace redundant monitoring wells, and to establish a better understanding of the water regime in the subject extension area to the west of the existing quarry void. Water quality monitoring is provided in Chapter 6.0 (Water). Laboratory results for the samples were compared to the groundwater threshold values (GTVs) as per Groundwater Regulations (SI No. 9 of 2010 as updated by SI No. 366 of 2016), and Drinking Water Regulations, (S.I. 122 of 2014). Exceedances in the GTV for some sampling events were identified for Nitrate and Ortho Phosphate, however it is considered that these exceedances are representative of agricultural activities.

When samples were compared to the Drinking Water Regulations, it should be noted that all samples were below the thresholds for these parameters. The main potential risks associated with the subject continuation of quarrying activities at the site to the water environment (and subsequently human health) are identified to be:

- the release of hydrocarbons to surface water and groundwater.
- the capacity of the waste water treatment facilities on-site.

Deficient management of site activities and design of waste water treatment facilities have the potential to impact underlying groundwater and neighbouring residential groundwater supplies.

Mitigation measures (identified in Section 6.7.1) were previously in place at the site under the 07/267 permission and are continued to the current day. This was, and is, to ensure that there is no adverse environmental impact to the underlying groundwater. It is therefore considered that there has been, and there is currently, no significant risk of water related impacts from the subject site on human health

3.4.7 AIR QUALITY

Fine particulates such as $PM_{2.5}$ and PM_{10} have a potential for negative effects on human health and may arise primarily from vehicle emissions. Of these finer particulates, the IAQM (2016) guidance states that quarries are more likely to experience suspended dust in the sub-coarse fraction (PM_{10} - $PM_{2.5}$) as opposed to the fine ($PM_{2.5}$) fraction. The suspension of fine particulates have been managed through the same mitigation measures employed for the management of deposited dust. The guidance also notes that air quality objectives for $PM_{2.5}$ and PM_{10} are scarcely exceeded around mineral sites due to their typical rural locations, as there is a lesser contribution from traffic pollution than in urban areas. This is likely to be the case for the application site as the immediate

surroundings are rural, with the town of Blessington located approximately 1.8 km southeast of the site.

Furthermore, as identified in Traffic and Transport Chapter 12.0, and Chapter 7.0 Air Quality, the traffic flows associated with the substitute consent are not expected to have changed compared to the previous operating scenario under 07/267, so any worsening of pollutants is not perceptible. Considering the likelihood that most airborne particulates are deposited within 200m (as presented in Chapter 7.0 Air Quality), and the traffic flows associated with the site are not anticipated to change, the impacts of air emissions from the site on human health are not perceived to pose a significant risk.

3.4.8 NOISE AND VIBRATION

The impact of the subject development in terms of noise and vibration is assessed in Chapter 9.0 of this rEIAR. Noise and vibration can have direct impacts on human health (i.e. damage to hearing from long term exposure, and the development of vibration syndromes such as hand-arm vibration syndrome, vibration white finger or carpal tunnel syndrome). Such risks and impacts to employees are managed on-site through the health and safety management system and by the use of personal protective equipment during certain tasks (including hearing protection).

Noise and vibration from the site can also have indirect impacts to surrounding residential developments through annoyance and effects on mental health. Blasting did not occur from the expiry of 07/267 in September 2020 to the current day. Monitoring did take place at the closest noise sensitive receptor (NSR) location (i.e. residential dwelling) during each blast historically. Planning conditions for the site and industry standards define appropriate limits for vibration peak particle velocity, air-overpressure, and the frequency at which blasting can be conducted at the site. Monitoring records to date show compliance with planning conditions limits and industry standards for the period that blasting did previously occur but as indicated above and vibration. With the continued application of site mitigation measures and cessation of blasting operations, it is considered that there has been, and there is, no current significant impact of vibration on human health surrounding the site.

The World Health Organisation's (WHO) 'Guidelines for Community Noise' documents details that protect the majority of people from being seriously annoyed during the daytime, with the outdoor sound level from steady, continuous noise not to exceed 55 dBL_{Aeq} in outdoor living areas.. These levels have not been nor are they currently exceeded as indicated in Chapter 9.0.

It is considered that with the employment of the proven mitigation measures at the site, noise and vibration emissions from the subject development have not had, and will not have, a significant effect on human health in the local environs.

3.4.9 HEALTH AND SAFETY

General Health and Safety

The Site Manager has been, and is currently, responsible for safety management on the site. The predominant health and safety concerns for the human environment relates to the possibility of humans and livestock straying into the quarry area and from blast related activity at the site. To mitigate against such events the following are already in place at the site:



Fencing will continue to be actively maintained at the application site to ensure that the risk of injury to civilians and livestock is minimised. The entrance gate will continue to be locked and controlled by the sites' management;

- Exposed edges in the subject extension will be appropriately protected with safety berms. These edges will also be sign-posted appropriately to identify any potential hazard; and
- Blasting has not taken place on site during the assessment period.

The health and safety of all those working for the applicant will continue to receive the highest priority and has been the case over many years. The applicant is committed to implementing the provisions of the Safety, Health and Welfare at Work Act 2005; the Safety, Health and Welfare at Work (General Application) Regulations 2007; the Safety (Working At Height) Regulations 2006; the Health and Welfare at Work (Construction) Regulations 2013; and the Safety, Health and Welfare at Work General Application 2016, S.I. 36 of 2016, to ensure so far as is reasonably practicable the safety, health and welfare of all employees and other persons who may be affected by site activities. The applicant is committed to providing appropriate information, training and supervision to employees have been and who are operating at the application site.

All site employees, contractors and subcontractors are required to wear a minimum personal protective equipment (PPE) whilst on-site, these are steel toed boots and a high visibility jacket or vest. Other task specific PPE which will be used at the application site include, safety glasses/goggles, hard hats, gloves and hearing protection.

The following health & safety improvements have been enforced since 2020 and the expiry of 07/267:

- Dust monitoring locations in numerous field areas within distance of the quarry to check dust levels monthly. These are reported quarterly by an external environmental consultant.
- Water sprinklers and a water bowser utilised to help keep dust levels low during drier periods.
- All plant and machinery are serviced regularly to help ensure they are running smoothly.
- Generators are maintained regularly, and any leakages are repaired almost immediately.
- Edge protection in place on wash plant.
- More lighting put in place.
- More safety signage put in place.
- A new H&S Officer started in August 2023.
- Guards and protection put in place on large wash plant.
- All fire extinguishers tested yearly.
- First aid kits stocked and checked regularly.
- All employees trained and receive regular safety training.
- Safety talks held regularly with employees
- Defibrillators on site checked and serviced when required.
- All safety data sheets on file for oils and chemicals.
- All stockpiles are monitored and grounds assessed for large machinery.
- Reg. Ref.: 07/267 operational hours maintained.
- Wheel was for all vehicles exiting the quarry.
- Road sweeper cleaning access roads.
- Hudson Brothers strive to achieve a high level of safety in their company. H&S Officer is on site full time and does daily checks in the quarry.



- Regular safety training to issued to employees and all new employees undergo a safety induction.

Site Security and Boundary Treatment

Previous third party submissions on 20532 raised concerns about the conditions of all site boundaries in respect of safety. Previous assessment of boundaries undertaken in September 2020 indicated that northern boundary fencing was found to be secure; that there were some isolated instances of damaged boundary fencing where bows of trees had fallen or were resting on the fencing on the west and south west boundary which has now been rectified; a substantial area of boundary treatment to the south was found to be in disrepair and has now been repaired; the entire eastern boundary has been substantially upgraded since third party concerns were raised against 20532. It should also be noted that the formalised boundary condition inspections are now included in the Environmental Management System (EMS). It should also be noted that fencing has been and will continue to be actively maintained at the site to ensure the risk of injury to the public and livestock is minimised. The entrance gate will continue to be locked and controlled by the site's management.

Finally, it should be noted that inspections and deficiencies on the boundaries, fencing and security are to be reported to the applicant's Environmental Officer. That Environmental Officer will be responsible for ensuring that appropriate corrective actions are taken to repair boundaries.

If emergency services are required at the application site, the closest Accident and Emergency unit operates out of Naas General Hospital, Naas, Co. Kildare (and also Tallaght University Hospital, Dublin 24). Fire emergency services for the site operate from Blessington Co. Wicklow. There have been no significant accidents.

Impact on Water Quality and Health

As the extraction of both sand and gravel and rock occurs at least 1m above the highest winter water table no discharge to the environment takes place.

Occasionally perched water is encountered during the extraction of sand and gravel and it drains away naturally as excavation progresses. Water is used in the processing of sand and gravel in a closed circuit 'wet' aggregate processing plant where water is recycled throughout the process. Silt laden water is disposed of in silt lagoons, where the silt settles out over time and is subsequently made available for site restoration. Water used in the processing of the aggregate is supplied from a pond (known as Pond K2). Processing of extracted rock takes place at the quarry face prior to being transported to market. No water is used in this process.

No streams overrun on the site or the immediate surroundings, due to the underlying sand and gravel.

The nearest surface water features are unnamed streams to the south (1.3km south west of the application boundary), 240 m from the Red Bog Special Area of Conservation (SAC) and 2.2km from Poulaphouca Reservoir and a small pond contained within this application site. None of those existing streams, the Red Bog SAC or the reservoir are linking hydrologically to this application site by any surface water features, and as excavation does not occur above the water table, there is no connection and consequently no risk of potential pollution from the recent and continued operation of the application site. The impact from excavation or blasting on the Blessington Public Supply Scheme is identified as imperceptible.

The main potential polluting impact from existing and current operations is the introduction of hydrocarbon to the underlying groundwater. The existing mitigation and management systems maintain protection measures for water against hydrocarbon pollution. Water monitoring undertaken during the assessment period did not identify any hydrocarbon impacts to the underlying groundwater. Other potential sources of waste water pollution include domestic waste water from the office/canteen similarly water monitoring did not identify impacts from domestic waste water systems. As such, the risk of pollution to surrounding water bodies including private wells during the assessment period is imperceptible.

Whilst the current and ongoing finished floor levels on site will vary due to topography and incline of the site. However, excavation has not taken place below a level of at least 1m above the highest seasonal water table level. Accordingly, there is, and has been, no groundwater discharged from the site and therefore no impacts on surrounding water uses including numerous private wells referred to in the Water Chapter.

The current design, mitigation measures and monitoring already being undertaken result in no residual deleterious effects on surrounding waterbodies or underlying groundwater aquifers nor indeed on water supply or water quality for surrounding residents.

Mitigation Measures

As identified previously, specific mitigation measures and health and safety best practices have historically and are currently employed and enforced on-site; no further remedial mitigation measures are considered necessary. Mitigation measures are identified in each of the relevant chapters of the rEIAR.

Residual Impacts

With the implementation of appropriate environmental, health and safety management practices, and the mitigation measures identified in the rEIAR it is considered that the likelihood of residual health and safety impacts is considered to be not significant.

3.5 CUMULATIVE IMPACTS

Sand and gravel quarrying activities currently take place in adjacent quarries to the south and east of the site. The closest quarries in the surrounding area which conduct rock extraction are located ca. 2.2 km to the northeast. It is considered that the substitute consent development has had beneficial impacts on both direct and indirect employment and economies surrounding the site as evidenced in a substantial number of letters received during the consultation period of 20532 in support of the applicant's development. Cumulative impacts of these surrounding quarrying activities during the assessment period in relation to water, air quality, and noise and vibration are considered in the respective chapters of this rEIAR. With the maintenance of on-site mitigation measures and the adherence to applicable thresholds there were, and are, no significant negative cumulative impacts to population and human health during the assessment period.

The continuation of the existing operation since 19th September 2020 in combination with the surrounding developments has not had a significant impact on population trends, amenity public health or public safety within the surrounding area. There are no other industrial operations in the vicinity of the site that would have generated a cumulative impact upon human beings over the substitute consent period.



3.6 'DO NOTHING' IMPACT

Given the nature of the rEIAR and the substitute consent process the potential impacts of a 'Do Nothing' scenario if the development were not operating during this period has not been considered.

3.7 ECONOMIC ACTIVITY CONSTRUCTION PHASE

There is no construction phase within the terms of this substitute consent application as this would have occurred under the 07/267 permission.

3.8 SOCIAL PATTERNS CONSTRUCTION PHASE

There is no social pattern to a construction phase that did not occur over the period 2023 to 2023 inclusive as there is no construction over that period.

3.9 MONITORING

There is no monitoring required other than that identified in other chapters of this rEIAR.

3.10 REFERENCES

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<http://www.cso.ie/en/census/>

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