

3 Population and Human Health

3.1 Introduction

This Remedial Environmental Impact Assessment Report (rEIAR) has been prepared to accompany a substitute consent application for an existing disused quarry at Coolsickin or Quinsborough, Monasterevin, Co. Kildare. The extraction works and associated works carried out during the lifecycle of the quarry within the Application Site is referred to herein as the 'Project'. The Project is located within the administrative boundary of Kildare County Council, (KCC).

This chapter of the rEIAR has been prepared by WSP Ireland Consulting Ltd (WSP) and assesses the impacts to human health and population of the previous activities relating to the development and operation at the site between 1 January 2000 and 31 December 2006.

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3.1.1 Technical Scope

The technical scope of this assessment is to consider the potential impacts and effects on the surrounding human environment that could have resulted because of the quarrying related activities carried out during the Project. This assessment considers the potential sources of change resulting from Project activities detailed in the Chapter 2 (Project Description). It also records remedial mitigation measures undertaken or proposed to be undertaken.

Effects of a development on the environment can impinge upon the surrounding human environment, directly and indirectly, positively and negatively. Direct effects may include such matters as safety, air and water quality, noise, landscape quality and road traffic. Indirect effects pertain to such matters as ecology and biodiversity, heritage and archaeology. These matters form discreet sections of this rEIAR in their own right and corresponding mitigation measures are comprehensively provided in those sections.

3.1.2 Geographical and Temporal Scope

The Historical arial mapping and documentation held by Kildare Country Council indicates extraction of aggregates within the Substitute Consent Application Site (referred to as 'Application Site' or 'Site') is estimated to have commenced within 2000 and the operation had ceased within 2006. Accordingly, the baseline for this rEIAR has been set to 01 January 2000, and the rEIAR process has assessed environmental impacts from that date to 31 December 2006 (see Chapter 2 Project Description for detail). This assessment period equates to approximately five years and is identified as 'short-term' duration (those lasting one to seven years sensu EPA 2022).

The geographical study area for the assessment covers the physical extent of the EIA boundary for the Site as shown in **Figure 3-1** and the assessment area has been extended as appropriate to identify the relevant Population and Human Health receptors surrounding the Project (the Study Area is within a 500m buffer of the rEIAR Boundary). In the context of this rEIAR, the Substitute Consent Application Site boundary is located entirely within the EIA Boundary and contains lands which form the historical extraction area and quarry working areas (i.e. the historical stockpile areas). The Substitute Consent Application Site boundary is shown in **Figure 3-1**.

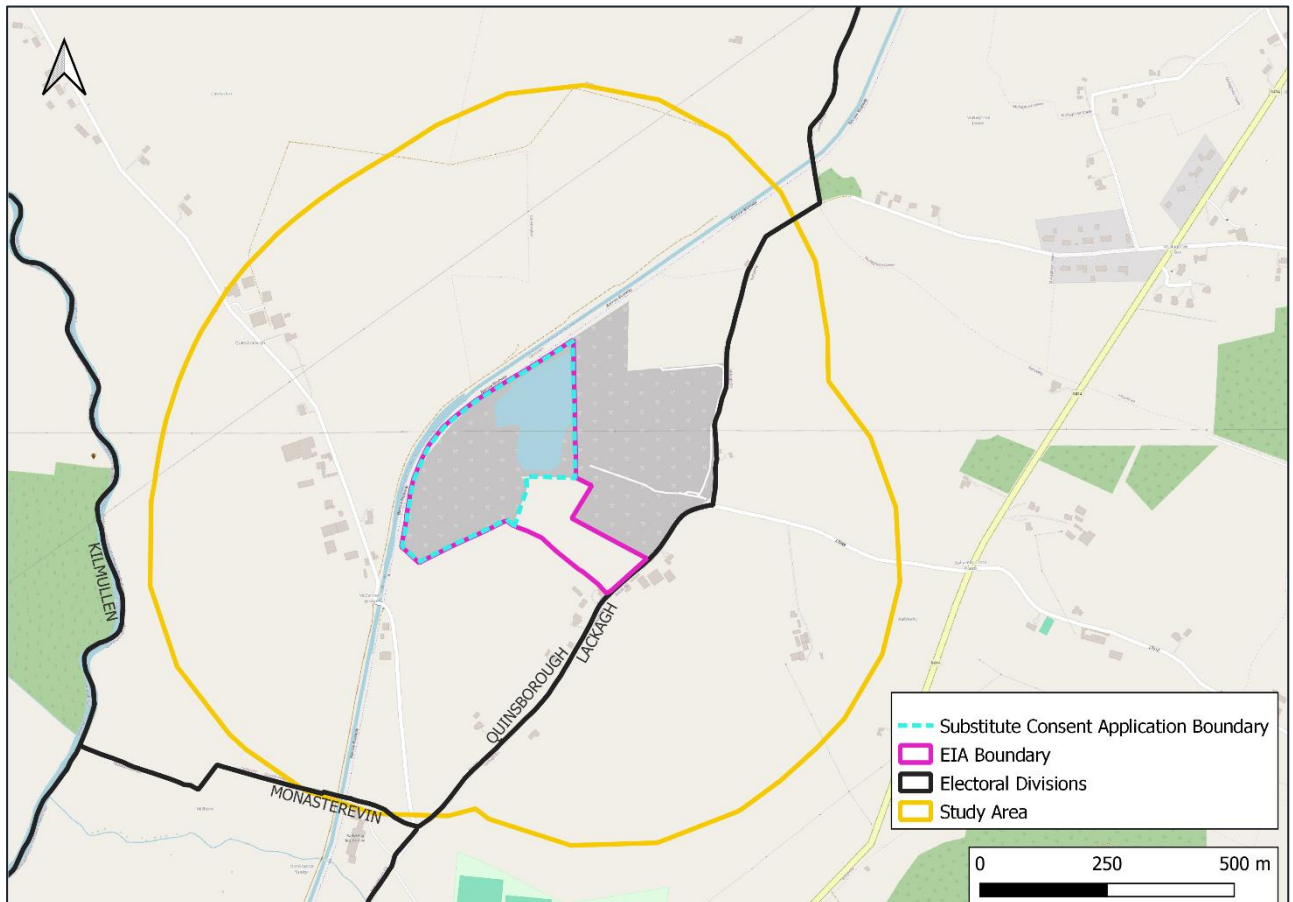


Figure 3-1 - Site study area with Electoral Divisions

3.1.3 Project Description Summary

The Project seeking substitute consent consists of extraction of sand, gravel and rock over an area of 7.87 ha through blasting, mechanical excavation and rock breaking along with aggregate processing and stockpiling. The Project was operational between the years 2000-2006.

A full project description is presented in Chapter 2 (Project Description).

3.2 Legislative and Policy Context

3.2.1 Legislation

This assessment has been made with cognisance to relevant legislation, including but not limited to:

- European Union Directive 2011/92/EU as amended by Directive 2014/52/EU – these Directives required that certain private and public projects which are likely to have significant resultant environmental impacts are subject to a formalised Environmental Impact Assessment prior to their consent;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI No. 296 of 2018) which amended the Planning and Development Act, 2000, and the Planning and Development Regulations, 2001. The 2014/52/EU Directive was transposed into Irish law through this Directive;
- The European Communities (Environmental Liability) Regulations 2008 (as amended) - These Regulations (SI 547/2008) transpose EU Directive 2004/35/CE on environmental liability with regard to the prevention and remedying of environmental damage. The purpose of these Regulations is to establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage. The Environmental Protection Agency (EPA) is designated as the competent authority for all aspects of these Regulations; and
- The Environmental Protection Agency Act 1992 and the Protection of the Environment Act 2003 – which detail the requirements associated with general pollution control and activities that come under integrated pollution prevention and control.

3.2.2 Relevant Policies and Plans

- The Kildare County Development Plan (CDP) 1999 is the strategy document for County Kildare which covers most of the temporal scope of this assessment period. The key policies and objectives of this plan are listed in Section 2.5.1 of the Project Description (Chapter 2).
- The Kildare CDP 2005-2011 was adopted on 18 May 2005 and covers the temporal scope from this date to 31 December 2006. The key policies and objectives of this plan are listed in Section 2.5.2 of the Project Description (Chapter 2).

3.2.3 Relevant Guidance

This assessment has been made with guidance from the 'Guidelines on the information to be contained in environmental impact assessment reports', published by the EPA in May 2022.

3.3 Assessment Methodology and Significance Criteria

3.3.1 Assessment aims

Having regard to the EPA's 2022 guidelines; the characteristics and context of the lands that are the subject of this rEIAR; and the retrospective nature of the Project, this rEIAR chapter aims to identify the likely significant impacts that the Project has and may have had on the 'quality of life' and are discussed under the following headings:

- Populations;
- Employment;
- Amenity (including Tourism);
- Land Use and Development Patterns; and
- Human health and Health and safety.

3.3.2 Qualitative Assessment Method

- As identified in Chapter 1 (Introduction, Scope and Methodology) of this rEIAR, a common framework of assessment criteria and terminology has been used based on the EPA's draft Guidelines on the Information to be Contained in EIARs (EPA, 2022). This common framework follows a 'matrix approach' to environmental assessment which is based on the characteristics of the impact (magnitude and nature) and the value (sensitivity) of the receptor.
- The sensitivity of communities and populations has been included and has been conservatively attributed a 'High' sensitivity. These descriptions for value (sensitivity) of receptors are provided in **Table 3-1** and **Table 3-2**.

Table 3-1 - Environmental value (sensitivity) and descriptions.

Value (sensitivity) of receptor / resource	Typical description
High	High importance and rarity, national scale, and limited potential for substitution.
Medium	Medium or high importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Table 3-2 - Environmental value (sensitivity) and descriptions for assessment groups

Group	Receptor / resource	Designated value (sensitivity) of receptor / resource
Populations / Communities	All individuals located in a particular location (this can be local, regional or at a national scale), and groups of people living in the same place or having a particular characteristic in common.	High
Private Dwellings	Residential property	High
Community land and facilities, and other lands	Designated local green space / valued community facility.	High
	Undesignated local green space / non-essential community facility	Low
	Derelict or unoccupied buildings or lands.	Low
Local Businesses	Businesses where viability is likely to be permanently jeopardised by a short disruption or worsening of trading conditions.	High
	Businesses where profitability may be harmed by a short or medium-term disruption or worsening of trading conditions.	Medium
	Businesses that could continue to operate without substantial harm if affected by a disruption or worsening of trading conditions.	Low
	Businesses that could continue to operate relatively unharmed if affected by a disruption or worsening of trading conditions.	Negligible
Non-motorised users	All non-motorised users utilising roads and networks, including pedestrians, cyclists, horse-riding, etc.	High
Human health	Health receptor that would be likely or expected to be directly affected. Receptor is well placed to take advantage of beneficial impacts, and/or is not well placed to deal with any adverse impacts.	High

Group	Receptor / resource	Designated value (sensitivity) of receptor / resource
	Health receptor that would be likely to be indirectly affected. Average ability to maximise beneficial impacts or cope with adverse impacts.	Medium
	Health receptor that would be unlikely to be affected. Receptor is not well placed to take advantage of beneficial impacts, and/or is well placed to deal with any adverse impacts.	Low
	Health receptor that would be unlikely to be affected or effects would be temporary in nature, or which would be anticipated to have a slight or no effect on human health.	Negligible
Vehicle travellers	Public transport, motor vehicles	Low

A description of the significance categories used is provided in **Table 3-3**. Effects that are either **Large or Profound are considered to be Significant**, and effects that are **Moderate, Slight or Imperceptible are considered to be Not Significant**. How the level of effect is determined, based on the environmental value and magnitude of impact, is explained in Chapter 1 (Introduction, Scope and Methodology) of the rEIAR.

Table 3-3 - Significance categories and typical descriptions.

Significance category	Typical description
Profound	<p>An effect which obliterates sensitive characteristics.</p> <p>Only adverse effects are usually assigned this level of significance. These factors are key issues in the decision-making and consent process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance which are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also be included in this significance category.</p>
Large	<p>An effect which, by its character, magnitude, duration or intensity alters a significant proportion of a sensitive aspect of the environment.</p> <p>These can be beneficial or adverse effects and are considered to be very important issues which are likely to be substantial in the decision-making process.</p>

Significance category	Typical description
Moderate	<p>An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.</p> <p>These are beneficial or adverse effects which may be important but are not likely to be central to decision-making or consent. The cumulative effects of these factors may influence consent or decision-making if they should lead to an increase in the overall adverse effect on a particular resource or receptor.</p>
Slight	<p>An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p> <p>These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.</p>
Imperceptible	<p>An effect capable of measurement but without significant consequences.</p> <p>No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.</p>

3.4 Baseline and Existing Conditions

Baseline conditions are set at 1 January 2000 and existing conditions (referring to conditions that existed at cessation of the Project operations) are set at 31 December 2006.

3.4.1 Surrounding Environment

The Site is wholly located in the townland of Coolsicken or Quinnsborough, which is situated ca. 2.7km north of Monasterevin and ca. 9 km southwest of Kildare Town. As noted, the Site is located with Coolsicken/Quinnsborough ED, the boundary of which has been provided in **Figure 3-2**.

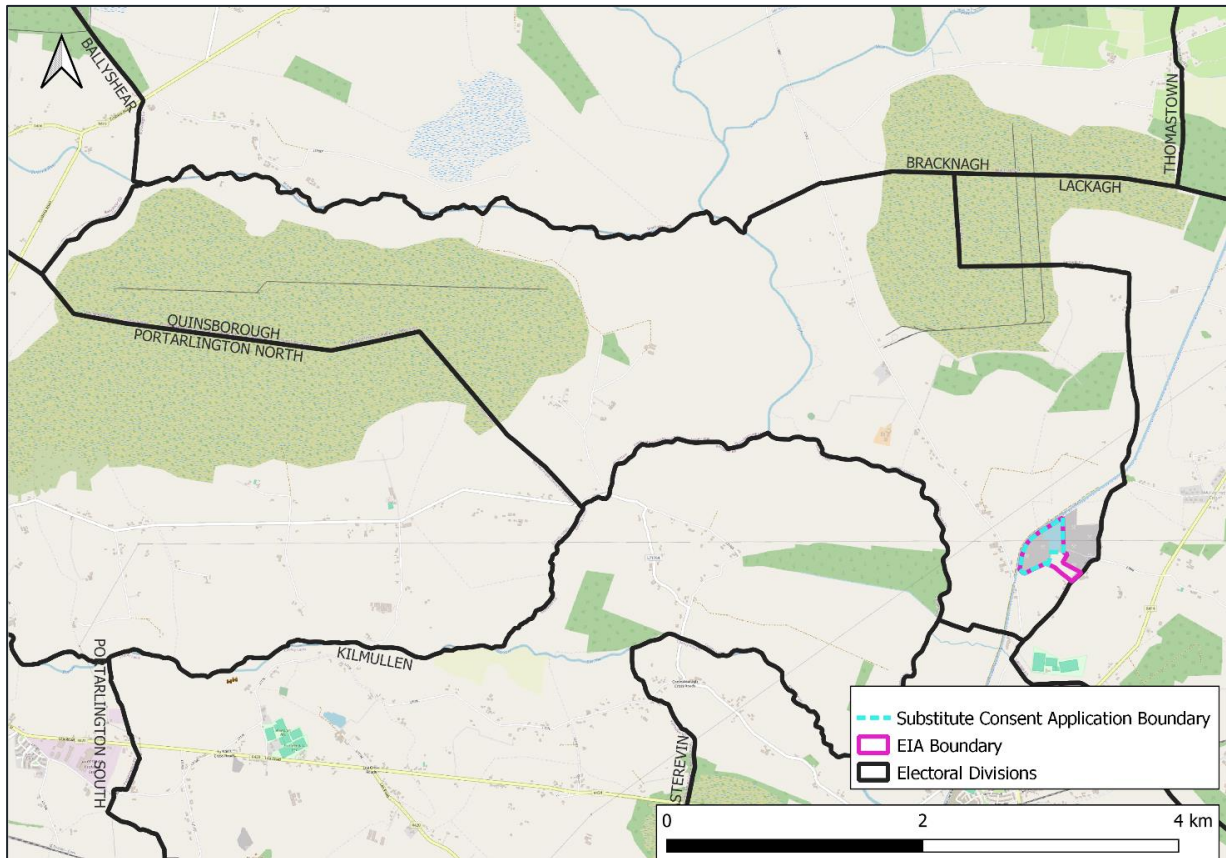


Figure 3-2 - Quinsborough ED Boundary

The lands contiguous to the boundaries of the Site are in agricultural use, predominantly pasture lands and a former disused quarry abutting the eastern. There are ribbon residential properties in the vicinity of the Site, primarily concentrated along the Local Road L1002 to the west and the L7049 to the east and southeast. The nearest school and church to the Site are located ca. 2.7 km to the south of the Site. The rural nature of the lands surrounding the Site has stayed consistent over the assessment period.

The number of residential receptors within the study area over the assessment period has not changed (Geohive, 2025; Kildare County Planning map, 2025), and this is mapped in **Figure 3-3** below. Non-residential receptors within 500 m of the EIA boundary are predominantly agricultural businesses (e.g. farms).

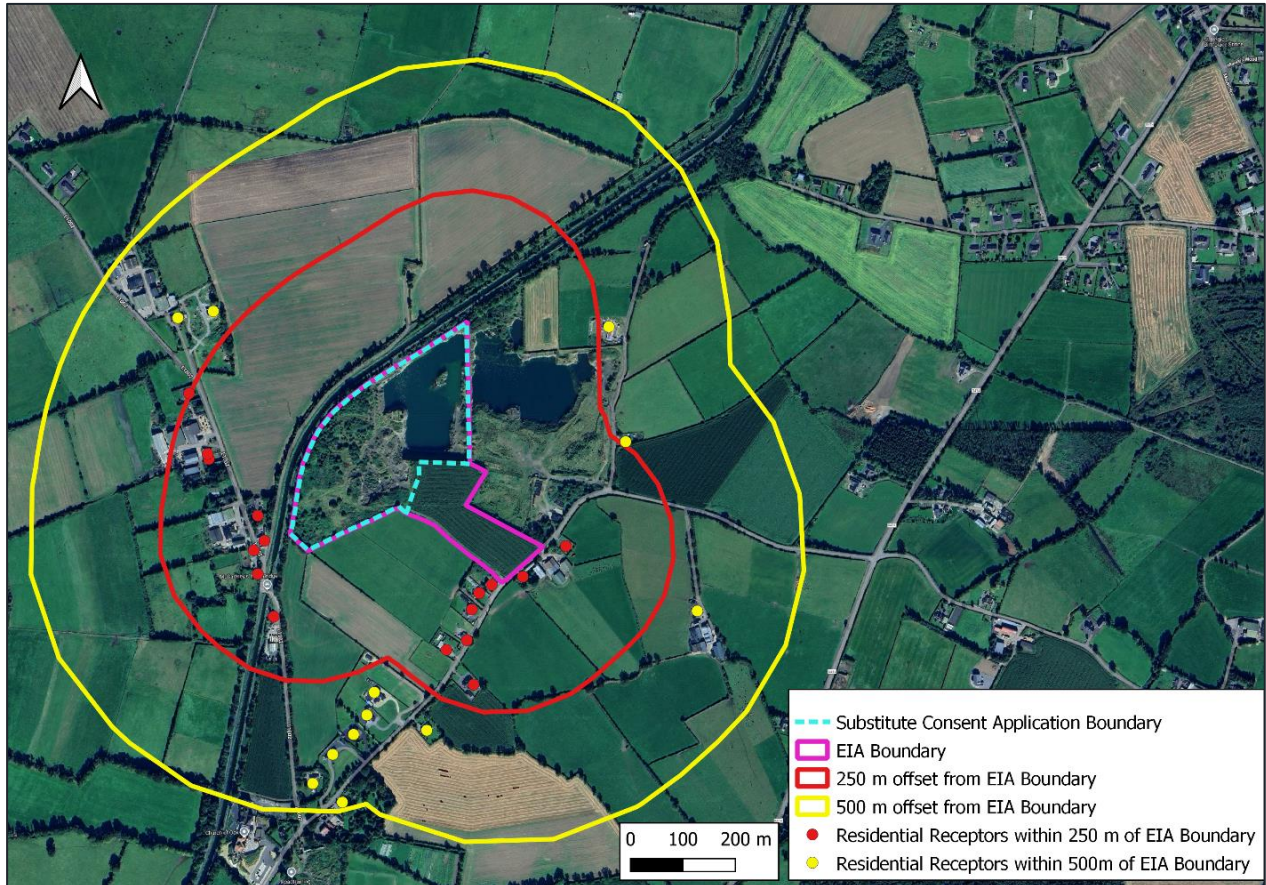


Figure 3-3 – Residential Receptors mapped within the Study Area¹.

3.4.2 Population

The Site is located within the ED of Quinsborough, which has an area of 1,453 hectares (CSO, 2007).

Table 3-4 summarises population statistics for the State, Leinster, Kildare and the Quinsborough Electoral Division (ED). The percentage population increase has been calculated between the Census periods of 2002 and 2006 (**Table 3-5**).

Over the census period 2002 to 2006, the population increase observed in Quinsborough ED was lower than the population increase observed in the county, regionally and nationally. It is unclear why this is the case but may be considered to be due to the rural nature of Quinsborough ED.

¹ Note that the residential development marked to the north-east of the EIA Boundary (yellow dot) in Figure 3-3 was not a receptor during the assessment period as this property was not built until after 2006.

Table 3-4 - Populations recorded during the 2002 and 2006 census period, (Central Statistics Office).

Region	2002	2006
Ireland (National)	3,917,203	4,239,848
Leinster	2,105,579	2,295,123
County Kildare	163,944	186,335
Quinsborough ED	115	137

Table 3-5 - Population dynamics (% change) from 2002 to 2006, (Central Statistics Office).

Region	2002 - 2006
Ireland (National)	8.2 %
Leinster	9.0 %
County Kildare	13.7 %
Quinsborough ED	19.1 %

A total of 25 No. existing third-party residential dwellings are located within 500 m of the EIA boundary, of these 13 No. residential dwellings are located within 250 m of the EIA boundary. The number of residences is based on a review of aerial photography during the assessment period, DCCA Eircode mapping and a local authority planning permission search. As can be seen from **Table 3-5** there was an increase in population in the Quinsborough ED from 2002 to 2006.

3.4.2.1 Population Density

Table 3-6 summarises population densities for the State, Leinster, Co. Kildare, and the Quinsborough ED. The population densities have been calculated between the Census periods of 2002 and 2006.

As expected from the increased populations, the population densities also increased in the State, province and county areas of the Census periods. The population density of the Quinsborough ED is much lower than that observed in the state and Province and County which reflects the rural nature of the area.

Table 3-6 - Population Density (persons per square kilometre) from 2002 and 2006, (Central Statistics Office)

Area	Size (km ²)	Population Density 2002	Population Density 2006
Ireland (National)	70,273	55.7	60.3
Leinster	19,800	106.3	115.92
County Kildare	1,695	96.7	109.9
Quinsborough ED	14.53	7.9	9.43

3.4.2.2 Households

Table 3-7 presents the number of households and persons per household for the State, Kildare and the Quinsborough ED. The statistics have been calculated for the Census periods 2002 and 2006.

It can be noted that the average size of households in Quinsborough ED and Kildare are above the average household sizes identified in the State for the same periods.

Table 3-7 - Households from 2002 to 2006, (Central Statistics Office).

Area	2002			2006		
	No. of households	No. of people	Average no. of people per household	No. of households	No. of people	Average no. of people per household
Ireland (National)	1,287,958	3,791,316	2.94	1,469,521	4,123,318	2.81
Kildare	50,477	160,538	3.18	60,957	183,598	3.01
Quinsborough ED	34	118	3.47	44	140	3.18

3.4.3 Employment

3.4.3.1 Employment at the Site

The impacts of the Site on employment have been assessed qualitatively based on the number of jobs which the Project has created. The Project has provided direct and indirect employment. Direct jobs include the workforce employed by the applicant directly at the site during the assessment period. Indirect employment includes those created in the supply chain to provide input (e.g. fuels), specialist labour (e.g. contract drivers) and services (e.g.

equipment maintenance) for the site and workforce. No data is available regarding the number of people directly employed at the Project during the assessment period. Based on similar development from that period in the early to mid-2000 it is estimated that ca. 2 staff would likely have been directly employed.

3.4.3.2 Principal Status

Table 3-8 summarises the employment status of the persons aged 15 years or older in County Kildare and the Quinsborough ED. Between the period of 2002 and 2006 it is evident that the percentage of those 'At Work' has stayed relatively consistent within the respective populations. There is a slight uptick in the 'Unemployed having lost or given up previous job' category in the Quinsborough ED from 2002 to 2006. This increase is broadly not consistent with county Kildare as that statistic has remained largely unchanged. Quinsborough ED and Co Kildare have both seen growth 'At Work' category from 2002 to 2006.

Table 3-8 - Principal Status of Persons 15 years and older in County Kildare and Quinsborough ED, in 2002 and 2006, (Central Statistics Office)

Status	Kildare 2002	Kildare 2006	Quinsborough ED 2002	Quinsborough ED 2006
At work	59.46%	63.9%	56.47%	58.88%
Retired	6.69%	7.21%	5.88%	9.35%
Student	11.53%	10.21%	11.76%	13.08%
Looking after home/family	13.92%	10.67%	15.29%	10.28%
Unable to work due to permanent sickness or disability	3.5%	3.36%	4.7%	4.67%
Unemployed having lost or given up previous job	3.34%	3.51%	2.35%	3.74%
Looking for first regular job	0.55%	0.77%	1.2%	0%
Others not in labour force	0.99%	0.36%	2.35%	0%

3.4.3.3 Employment industry

Table 3-9 summarises the percentage of persons aged 15 years or older per employment industry in County Kildare and the Quinsborough ED, census year 2002 (data from 2006 was not available. Given that this ED is mainly rural and does not contain any towns or cities it is expected that the percentage of the population involved in agriculture, forestry

and fishing would be more than the county average. Employment industries where the percentage of persons in Quinsborough ED are above the county average include; agriculture, forestry and fishing, manufacturing, and professional services. The 'Other' employment category was found to be higher in Quinsborough ED than the county average, therefore it is considered that the employment industries of the working population of Quinsborough ED are not best described in the defined criteria in **Table 3-9**.

Table 3-9 - Percentage of persons in work by industry, 2002 (Central Statistics Office)

Industry	Kildare 2002	Kildare 2006	Quinsborough ED 2002	Quinsborough ED 2006
Agriculture, forestry and fishing	4.14%	Not Available	18.75%	Not Available
Building and construction	10.31%	Not Available	2.08%	Not Available
Manufacturing industries	17.44%	Not Available	18.75%	Not Available
Commerce and trade	27.29%	Not Available	10.42%	Not Available
Transport and communications	5.3%	Not Available	4.17%	Not Available
Public administration	7.66%	Not Available	2.08%	Not Available
Professional services	14.26%	Not Available	16.67%	Not Available
Other	13.58%	Not Available	27.08%	Not Available

3.4.3.4 Local employment centres

The Site is situated ca. 2 km north of the town of Monasterevin, on the L7049 local road. The Site is in close proximity to other towns such as Kildare, Portarlinton and Rathangan.

The Site is also well positioned in the greater Dublin area and this location in a regional context has continued influence on the economic activity of the area. Public transport linkages and the M7 motorway provide vital linkages and strengthen the area's status as a commuter zone and also as a centre for economic investment and activity.

Using the M7 motorway, Dublin city centre is 70 minutes away by car, while Monasterevin can be reached in approximately 5 minutes. Naas is only a 30-minute drive using the M7.

The relative ease of access increases the attractiveness of the area as a commuter destination for the greater Dublin area.

3.4.4 Amenity (including tourism)

The immediate area surrounding the Site is primarily agricultural land and therefore has limited amenities, although the Grand Canal – Barrow Line, and associated towpath, abuts the Site to the north and north-west.

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 Monasterevin. Some of the main areas have been identified and described in this section.

Sport and recreational grounds within the vicinity the Site include the Ballykelly Gaelic Football Club, which is located approximately 2 km south of the Site; the Monasterevin Blueway Kayaking Club is also located approximately 3 km to the south and Ros Glas GAA Club, approximately 4.5 km to the southwest of the Site

The Moore Abbey Woods is located south of Monasterevin, ca. 4 km south from the Site. It offers opportunities for walking and recreation with the cycling, jogging and dogs permitted.

3.4.5 Land Use

The Site comprises lands which were used during the assessment period for quarrying activities and are classified in Corine Landcover (EPA, 2018) as 'Pastures' (Figure 3-4).

The lands surrounding the Site can be characterised as rural in nature, with land uses in the area being agricultural, forestry and single-house residential. The lands contiguous to the boundaries of the Site are in agricultural use, predominantly pasture lands and arable/cultivation land. A disused quarry void is located to the east of the Site. The boundaries of the EIA Boundary are comprised predominantly of hedgerows and scrub.

There are 16 no. scattered residential properties within the study area, primarily concentrated along the Local Road L7049.

There are no waste licenced or IE/IPC Licenced facilities within 1 km of the Site.

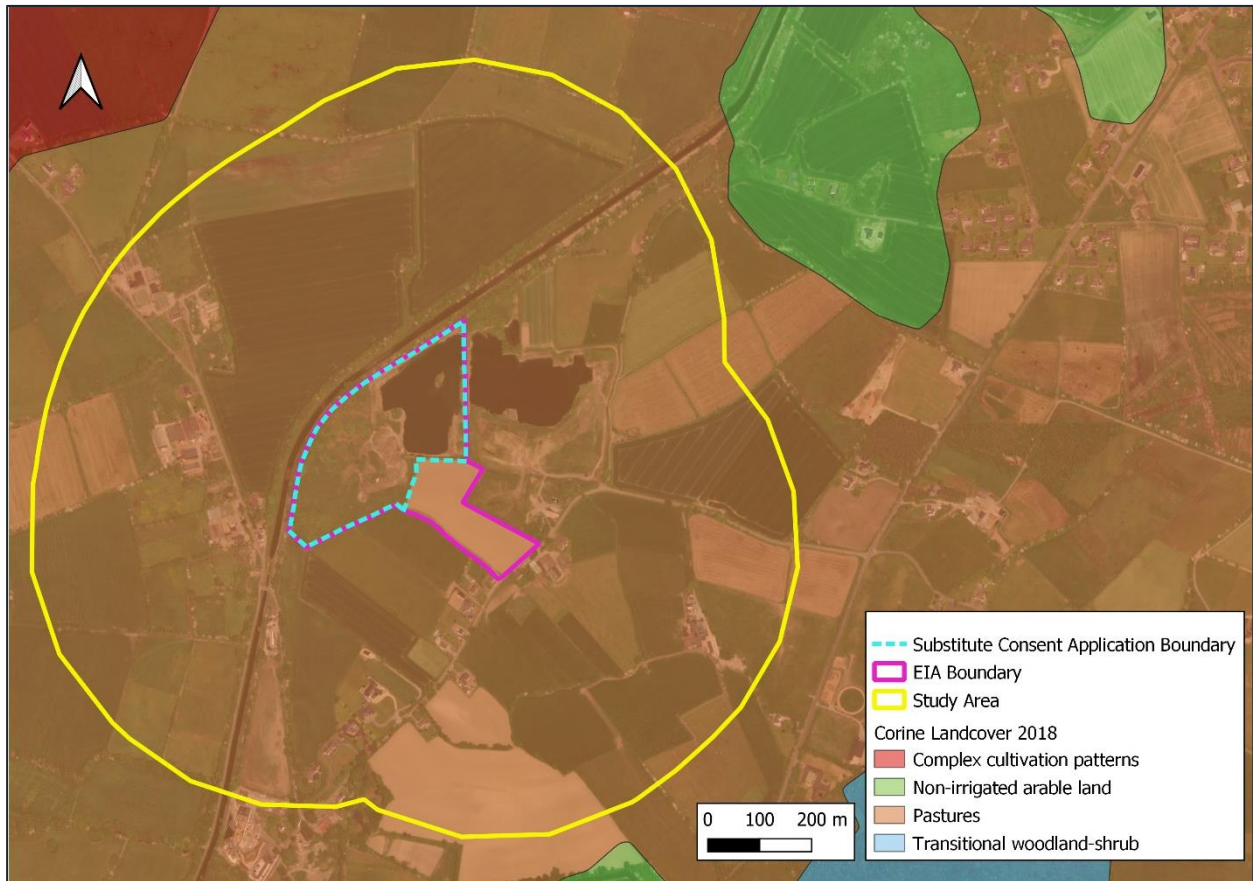


Figure 3-4 - Corine Landcover classification

3.4.6 Human Health

The 2002 and 2006 censuses did not issue a summary of the general health of the population as subsequent CSO publications do. However, there are statistics available on Persons with a disability by age group for those years, see **Table 3-10** below.

Quinsborough ED. In the 2002 Census there was no persons under the age of 25 who had a disability in the Quinsborough ED. However, in the 2006 Census 11.27% of 0-14 year olds and 8.99% 15-24 year olds are classified as having a disability.

In contrast, the percentage of older persons (65 years and over) in the Quinsborough ED 2006 Census who are classified as having a disability saw a decrease to fall below the average of Co Kildare values in 2002 and 2006 and the Quinsborough ED in 2002.

Table 3-10 - Persons with a disability by age group (Central Statistics Office)

Persons with a disability by age group	Kildare 2002 (%)	Quinsborough ED 2002 (%)	Kildare 2006 (%)	Quinsborough ED 2006 (%)
0 - 14 years	7.17	0	11.27	25
15 - 24 years	7.14	0	8.99	8.33

Persons with a disability by age group	Kildare 2002 (%)	Quinsborough ED 2002 (%)	Kildare 2006 (%)	Quinsborough ED 2006 (%)
25 - 44 years	22.05	14.29	23.16	16.67
45 - 64 years	30.66	28.57	29.43	33.33
65 years and over	32.96	57.14	27.13	16.67

There were no waste licenced or IE/IPC licenced facilities within 1 km of the Site. There was also no waste licenced facilities within 5 km of the Site during the assessment period.

3.4.6.1 Health and Safety

It is unknown who the Site Manager was during the assessment period. The Site Manager would have been responsible for the working environment, traffic management, emergency procedures, first-aid arrangements and safe systems of work.

3.5 Characteristics of the Project

A detailed Project Description has been provided within Chapter 2 of this rEIAR.

3.6 Potential Effects

3.6.1 Population

Potential impacts from the Site which may have affected local populations during the assessment period include nuisance from noise, vibration, dusts, landscape and visual impacts, and impacts to groundwater. The potential extent of these will be limited to the local community surrounding the Site. As identified in Section 3.1.2., the geographical study area for the assessment covers the Project area and a study area of 500 m from the EIA boundary. Assessment of potential impacts to the population of this local community will be based on residents living closest to the Site and within this 500 m buffer area. These potential impacts have been assessed in the respective chapters of: Lands, Soils and Geology (Chapter 5), Water (Chapter 6), Air Quality (Chapter 7), Noise and Vibration (Chapter 9); and Landscape and Visual (Chapter 11).

A total of 25 no. existing residential dwellings are found to be currently within 500 m of the EIA boundary, with no. 13 of these sitting within 250 m of the EIA boundary. It is noted that population increase has taken place in the Quinsborough ED during the assessment period, this was by a larger percentage than was seen regionally or in the State.

These receptors are valued with a High sensitivity. Based on the assessment of environmental impacts (identified above) in other chapters of this rEIAR it is considered that the magnitude of impact on the population dynamics of the local community has been considered to be Low (Adverse). Therefore the predicted level of effect is no greater than Slight given the scale of the population with the vicinity of the Project. The level of effect is **Not Significant**.

The populations within the surrounding area have increased during the assessment period and it is considered that the Project has had a Negligible (adverse) direct or indirect impact on the population size, age distribution, density and household composition in the study area or in the Quinsborough ED during the same period. Therefore the predicted level of effect is no greater than Slight and is **Not Significant**.

Employment levels at the Site have remained at similar levels during the assessment period, therefore the potential direct impact on local population growth due to workers in the area was considered to be Negligible (Beneficial). Therefore the predicted level of effect is no greater than Slight and is **Not Significant**.

3.6.2 Employment

The numbers of employees which the Site had directly employed over the assessment period is estimated to be no. 2. The Site would have created indirect employment through roles such as site service contractors and contract truck drivers, depending on market conditions.

The Site provided aggregates to the construction sector which would have also led to further indirect employment. It is therefore considered that the operation of the Site has had a Negligible (Beneficial) magnitude of effect on economic activity in the area. Therefore the predicted level of effect is Slight and is **Not Significant**.

3.6.3 Amenity (Including Tourism)

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 and continued during the assessment period while quarrying was undertaken, it is unlikely that the activities at the Site impacted the tourist potential of the local area. Further information regarding landscape and visual impact and mitigation measures is included in Chapter 11 (Landscape and Visual) of this rEIAR.

The amenity areas identified in Section 3.4.4 (which include local designated green space / community facilities) are considered valuable to the local communities and have been valued with a high environmental sensitivity. Given the distance of the amenity areas from the Site it is considered that they would have perceived a Negligible (Adverse) magnitude of effect during the assessment period. Therefore the predicted level of effect is Slight and is **Not Significant**.

3.6.4 Land Use

The disused quarry was operational between 2000–2006, and quarrying activities in the lands on the adjacent land directly east of the rEIAR Boundary have been identified on the GeoHive MapGenie imagery 1995-2000 mapping. Quarrying activities in the vicinity of the Site ceased since 2006. Extraction was not carried out on public lands. Agricultural lands

were lost, however the Project was a commercial concern that provided employment. Therefore the land use is considered to be of no greater than medium importance and rarity at a local scale and therefore the sensitivity of receptor is considered to be Low.

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 during the assessment period, with the mainstay of local activities being agriculturally based. Therefore, as quarrying is an established practice, the extraction activities during the assessment period has been considered to have had a Negligible (Adverse) impact on social consideration compared with the current dynamics. Therefore the predicted level of effect is at most Slight and is **Not Significant**.

3.6.5 Human Health

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

Potential impacts to human health with regards to air quality include dust generating activities on the Site. Other impacts include increased concentrations of airborne particles and combustion emissions due exhaust emissions from diesel powered vehicles/equipment used on-site and other vehicles accessing the Site.

Impacts to human health from excess noise and vibration on-site may result in; hearing loss and various vibration syndromes of workers from high level occupational exposure. Off-site impacts include the annoyance and effects on mental health in the surrounding residential receptors.

The companion chapters of this rEIAR define and assess the predicted impact of the Project and set out mitigation measures from the perspective of discrete environmental factors. These chapters have determined that the assimilative capacities of those environmental factors are sufficient, with mitigation measures, to accommodate the Project without significant negative impacts and it is considered that the human health has been protected. However, for this assumption to be drawn, the mitigation measures set out in the chapters Soils and Geology (Chapter 5), Water (Chapter 6), Air Quality (Chapter 7), Noise and Vibration (Chapter 9); and Landscape and Visual (Chapter 11) and Traffic and Transport (Chapter 12) of the rEIAR must be implemented. Companion chapters of this rEIAR indicate that the level of effects to Human Health is no greater than Slight and therefore is **Not Significant**.

Table 3-11 - Summary of Evaluation of Impacts and their Effect Significance

Receptor	Sensitivity	Source of Impact/Description of Change	Impact Magnitude	Level of Effect
Local Populations / Communities	High	Change in local population community size, age distribution, density and household composition due to nuisance environmental emissions from the Site.	At most,Low (adverse)	At most Slight
Local Employment	High	Provision of continuing employment at the Site over the assessment period	Negligible (beneficial)	Slight
Land Use and Development	Low	Land take from rural agricultural enterprises.	Negligible (adverse)	Imperceptible
Amenity	High	Nuisance impacts from factors such as air quality, noise, vibration, traffic and landscape and visual on community lands, sports and recreation areas, tourism and religious centres.	Negligible (adverse)	Slight
Employees / Contractors	High	Health and safety management practices which may impact direct employees and sub-contractors on site.	Negligible (adverse)	Slight
Human health	High	Discharges and the introduction of contamination to the underlying groundwater thereby changing water quality.	Negligible (adverse)	Slight
Human health	High	The generation of fugitive and combustion emissions (dust, PM10, PM2.5, NO2 and SO2) from site activities thereby changing air quality.	Negligible (adverse)	Slight

Receptor	Sensitivity	Source of Impact/Description of Change	Impact Magnitude	Level of Effect
Human health	High	Noise and vibration from Site activities impacting surrounding residential receptors through annoyance and effects on mental health.	Low (adverse)	Slight

3.7 Remedial Mitigation and Monitoring

No remedial measures to address impacts to the population and human health during the assessment period have been identified.

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

3.8 Residual Effects

The assessment concludes that the Project did not give rise to significant adverse effects to surrounding human environment during the assessment period of 1 January 2000 to 31 December 2006. In all cases the residual effect is considered to be **Not Significant**.

3.9 Cumulative Effects

Cumulative impacts of the adjacent quarry activities during the assessment period in relation to water, air quality, and noise and vibration are considered in the respective chapters of this rEIAR.

The Project 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. In all cases the cumulative effect is considered to be **Not Significant**.

3.10 Difficulties Encountered

No significant difficulties were encountered.

3.11 References

Central Statistics Office (2024). CSO Visual. Available at:

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