



216983-04/11/2021-EIAR Main Report Part 3 (Population & Human Health, Biodiversity)

4. Population & Human Health

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INTRODUCTION

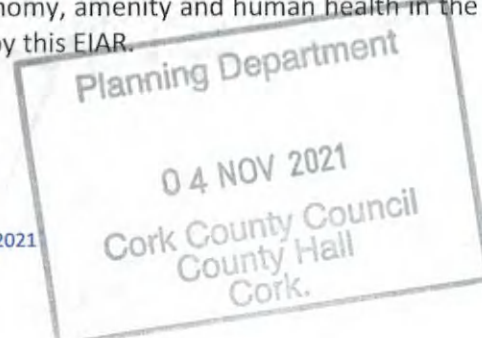
- 4.1 This Chapter of the Environmental Impact Assessment Report (EIAR) relates to the potential effects associated with the further development of the existing quarry at Rossmore, Carrigtwohill, Co. Cork on population and human health.
- 4.2 The operator of the existing quarry and applicant is Lagan Materials Ltd. (hereafter referred to as "Lagan").
- 4.3 For further detail of the proposed development and the application site, refer to Chapter 2 of this EIAR.

Scope of Work / EIA Scoping

- 4.4 The objective of the Directive (Directive 2011/92/EU), as amended by Directive 2014/52/EU, is to ensure a high level of protection of the environment and human health, through the establishment of minimum requirements for environmental impact assessment (EIA), prior to development consent being given, of public and private developments that are likely to have significant effects on the environment.
- 4.5 In the context of "population and human health", Article 3.1 states that 'the environmental impact assessment shall identify, describe, and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on a number of factors inclusive of population and human health.
- 4.6 In reference to "human health", in the context of implementing the 2014 Directive, the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018) refer to European Commission guidance which states that:

"Human health is a very broad factor that would be highly project dependent. The notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population"

- 4.7 Annex IV point 5(d) also refers to the need for the EIAR to include 'a description of the likely significant effects of the project on the environment resulting from, inter alia:
- (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters)
- 4.8 On the basis of the guidelines, the scope of this Chapter of the EIAR is limited to a consideration of population, employment, tourism and the economy, amenity and human health in the context of the specialist environmental topics addressed by this EIAR.



Consultations / Consultees

- 4.9 No external consultations were undertaken in the preparation of this Chapter of the EIAR, although there was extensive consultation with other specialist contributors.

Contributors / Author

- 4.10 This Chapter of the EIAR was prepared by Tim Paul, Director with SLR Consulting Ireland. Tim is a Chartered Engineer (CEng MIEI); Chartered Mineral Surveyor (MRICS) and a Member of the Institute of Quarrying (MIQ). He has over 25 years' experience in minerals planning and preparing planning applications & environmental impact assessment reports for quarries and mine developments in Ireland and internationally. He is co-author of the EPA (2006) Environmental Management Guidelines for the Extractive Industry.

Limitations / Difficulties Encountered

- 4.11 No limitation or difficulties were encountered in the preparation of this Chapter of the EIAR.

REGULATORY BACKGROUND

Legislation

- 4.12 There is no specific legislation relevant to this Chapter of the EIAR. Legislation, if any, which is relevant to each pathway (noise, air, soil, water, etc), is addressed elsewhere in this EIAR.

Planning Policy

- 4.13 The National Planning Framework adopted in February 2018, refers to aggregates and minerals under section 5.4 'Planning and Investment to Support Rural Job Creation.' It states that:

'Extractive industries are important for the supply of aggregates and construction materials and minerals to a variety of sectors, for both domestic requirements and for export.'

It also states that:

'Aggregates and minerals extraction will continue to be enabled where this is compatible with the protection of the environment in terms of air and water quality, natural and cultural heritage, the quality of life of residents in the vicinity, and provides for appropriate site rehabilitation.'

- 4.14 Under the NPF, it is a national policy objective (23) to:

'Facilitate the development of the rural economy through supporting a sustainable and economically efficient agricultural and food sector, together with forestry, fishing and aquaculture, energy and extractive industries, the bio-economy and diversification into alternative on-farm and off-farm activities, while at the same time noting the importance of maintaining and protecting the natural landscape and built heritage which are vital to rural tourism.'

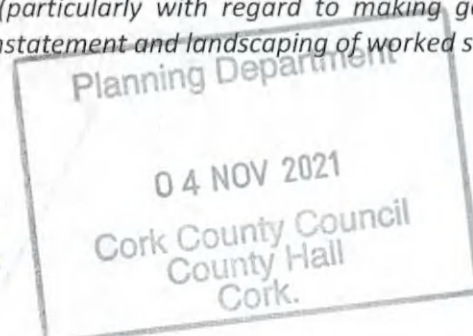
- 4.15 The vision of the extant Cork County Development Plan 2014 ('the CDP', currently under review) is to:

'provide for the development of County Cork as an attractive, competitive and sustainable place to live, visit and do business, where the quality of its economy, natural and built



environment, culture and the strength and viability of its communities are to the highest standards.'

- 4.16 The policies and objectives of the CDP are intended to contribute to the delivery of a number of key aims for the county as a whole. They are as follows:
- a) Enhanced quality of life for all
 - b) Sustainable patterns of growth in urban and rural areas
 - c) Sustainable and balanced economic investment
 - d) An effective physical and community infrastructure
 - e) A quality built environment
 - f) A network of enhanced natural resources
 - g) Responsible guardianship of the County
- 4.17 Section 6.12 of the CDP refers to mineral extraction and states that mineral extraction and the aggregate industry are important to the economy of the county in terms of employment generation and providing raw materials to the construction industry.
- 4.18 It also states that it is the aim of this plan to safeguard areas of significant resources from incompatible developments to ensure the continued viability of the extractive industry whilst ensuring that environmental, rural, scenic and residential amenities are protected.
- 4.19 The Plan refers to 'distinct clusters' of quarries at locations near Carrigtwohill, Midleton, Ovens, along the Bandon River from Dunmanway to Innishannon and to the east of Kanturk around Cecilstown.
- 4.20 It further states that 'The nature of the extractive industry is such that the industry is required to be developed where the resource occurs and may give rise to land use and environmental issues that must be considered in the planning process.
- 4.21 The economic importance of quarry development is also emphasised. The CDP states that 'the Mineral and Aggregate Industries are important sectors of the rural and wider economy' with the raw materials extracted through quarrying, such as sand, gravel and limestone are used in the building of homes and roads.
- 4.22 CDP Objective EE 12-3 'Impacts of Mineral Extraction' is to
- 'Minimise environmental and other impacts of mineral extraction through rigorous application of licensing, development management and enforcement requirements for the extractive industry and ancillary developments.*
- All extractive industry developments to have regard to the "Quarries and Ancillary Activities Guidelines for Planning Authorities (2004)" published by the DoEHLG or as may be amended from time to time.*
- With new quarries and mines and extensions to existing quarries and mines regard should be had to visual impacts, methods of extraction, noise levels, dust prevention, protection of rivers, lakes, European sites and other water sources, impacts on residential and other amenities, impacts on the road network (particularly with regard to making good any damage to roads), road safety, phasing, reinstatement and landscaping of worked sites.'*



Planning History

4.23 The planning history of the quarry is summarised below:

Ref.	Decision Date	Description
S/02/5476 (ABP Ref. PL 04.203762)	29/04/2004 Grant Permission with Conditions.	Extension of quarrying of sand, gravel and limestone over an area of 7.2 hectares, an increase in the output of limestone from the established quarry and proposed extension area, the quarrying of limestone by blasting, the construction and operation of an asphalt plant Permission extended under Register Reference 14/04061.
14/04061	06/03/2014 Grant Permission with Conditions.	Extension of duration to Permission granted under An Bórd Pleanála Reference No. PL 04.203762 (pl.reg.no. 02/5476).
PL04.SU0093	10/03/2017 Grant Permission with Conditions.	Substitute Consent Application.
PL04.QD0010	10/03/2017 Grant Permission with Conditions.	Further Development of Quarry.

Guidelines

4.24 As outlined previously, this Chapter of the EIAR has been prepared on the basis of the Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018) and draft *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* by the EPA (2017).

Technical Standards

4.25 There are no technical standards relevant to this Chapter of the EIAR. Technical standards, if any, that are relevant to each pathway (noise, air, soil, water, etc.) are addressed elsewhere in each specialist chapter of this EIAR.



RECEIVING ENVIRONMENT

The Proposed Development Site

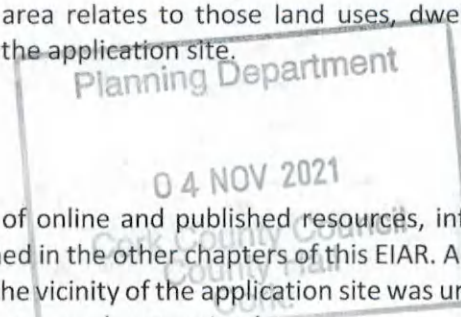
- 4.26 The development site is located in a coastal setting and on a local county road approximately 2km south of Carrigtwohill and 6km southwest of Middleton, Co. Cork. It is located approximately 2km south of N25 National Primary Road (E-30 European Route) which links Cork City to Rosslare Europort (refer to Figure 1).
- 4.27 The site is located in the townland of Rossmore, Carrigtwohill, Co. Cork. Access to the lands is via an existing access to the public road to the north which connects to the N25 National Primary Road to the north. The local county road forms the northern site boundary which links the R624 Regional Road to the west at Fota and the N25 National Primary Road at Middleton. Beyond the southern boundary of the lands is an access right of way to the adjacent Kilsaran quarry property lands, and Rossmore Bay, part of the Cork Harbour channel.
- 4.28 The development site is the existing quarry and the proposed development is similar to that previously granted under An Bord Pleanála reference number PL04.QD.0010 and will consist of the deepening of the existing quarry extraction area by 2 no. 15 metre benches from -20m OD to -50m OD, along with minor amendments to the permitted quarry layout (Plan File ref. no's: S/02/5476 & ABP Ref. PL04.203762 and ABP Ref. PL04.QD.0010) all within the existing permitted quarry footprint and the continued use of the existing water management system (settlement pond / infiltration pond system, permitted under PL04.QD.0010) for the life of the proposed development, all within an application area of c. 12.6 hectares.
- 4.29 An extraction capacity of up to 375,000 tonnes per annum is sought to provide the applicant with the ability to respond to demand for aggregates for large infrastructure projects in the Region. Permission is sought for twenty years plus two years for final restoration (total duration 22 years).

Surrounding Area

- 4.30 The land-use consists predominantly of agricultural land with fields under arable production and permanent pasture but also includes quarrying use and golf courses. The Kilsaran quarry adjoins the western boundary of the site.
- 4.31 Further beyond the immediate adjacent land uses there is Fota Island Wildlife Park (2km to the west), the commercial/retail/residential centre of Carrigtwohill (2km to the north) and other extractive industries (2.5km to the north-east).
- 4.32 For the purposes of this assessment, the study area relates to those land uses, dwellings and buildings on the public road network surrounding the application site.

Baseline Study Methodology

- 4.33 The baseline study comprises a desk-top review of online and published resources, information provided by the applicant and information contained in the other chapters of this EIAR. A review of existing residential housing and local receptors in the vicinity of the application site was undertaken and Ordnance Survey maps and aerial photography were also examined.



Sources of Information

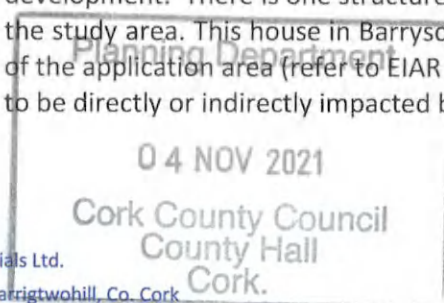
- 4.34 Baseline information was obtained from the following sources:
- Myplan.ie (<http://myplan.ie/index.html>);
 - Pobal.ie (<https://maps.pobal.ie/WebApps/DeprivationIndices/index.html>)
 - Historic Environment Viewer (<http://webgis.archaeology.ie/historicenvironment/>);
 - Cork County Development Plan 2014 (currently under review);
 - Specialist environmental topic chapters of this EIAR;
 - Ordnance Survey maps;
 - Aerial photography;
 - Openstreetmap.org;
 - Live Register Statistics;
 - Census 2016.

Context

- 4.35 The surrounding area is predominantly rural in character and ribbon development comprising a series of one off rural houses and agricultural buildings are dotted along the adjacent road network. Agricultural land makes up the remaining land use and tillage farming to be active in the local area.
- 4.36 The proposed development site is located within the City Harbour and Estuary Landscape Character Type as defined by the Cork County Development Plan 2014. According to the Cork County Development Plan 2014, the application site is also located within a High Value Landscape with a scenic route reference number S52 located to the south across the estuary at N.E. Great Island.
- 4.37 The Cork County Development Plan also states that 'Landscape Character Types which have a very high or high landscape value and high or very high landscape sensitivity and are of county or national importance'. Within these High Value Landscapes the location, siting and design of large scale developments within these areas will need careful consideration and any such developments should generally be supported by an assessment including a visual impact assessment which would involve an evaluation of visibility and prominence of the proposed development in its immediate environs and in the wider landscape (refer to EIAR Chapter 13 – Landscape that includes a visual impact assessment).

Environmental and Heritage Designations

- 4.38 The proposed development is located adjacent to Great Island Channel which is a Special Area of Conservation (SAC), and it is also adjacent to the Cork Harbour Special Protection Area (SPA).
- 4.39 There are no recorded monuments within the proposed development site (refer to EIAR Chapter 12). The closest Recorded Monument to the application area externally is RMP CO076-007---- a Lime Kiln in Barryscourt townland. This monument is situated 0.42km north of the application area and is considered to be too far distant to be directly or indirectly impacted by the proposed development. There is one structure included in the NIAH situated outside the application area in the study area. This house in Barryscourt townland No. 20907613, is located 0.52km to the north of the application area (refer to EIAR Chapter 12). This structure is considered to be too far distant to be directly or indirectly impacted by the proposed development.



Population

4.40 The review of population is based on a Small area ID 047077003 taken from the Central Statistics Office (CSO) website (shown in Figure 4.1) and the electoral division of Carrigtohill. The change in population from 2011 to 2016, as per the Census 2016, for the electoral division, County Cork, Munster and the State is also outlined in Table 4.1 below. This shows a marginal increase in population for the Small area ID 047077003 with a much greater increase in the wider ED of Carrigtohill. Much of the development within this ED has taken place north of the N25 national road.

Table 4-1
Population Change 2011 - 2016¹

	2011	2016	% Change
Small area ID 047077003	234	242	3.4
Carrigtohill ED	6,665	7,334	0.10
Co. Cork	399,802,	417,211	4.3
Munster	1,244,000	1,280,000	2.7
Ireland	4,588,252	4,757,976	3.7

4.41 In 2016, the total population in County Cork was 417,211, of which Males numbered 206,953 and Females were 210,258 The census results indicate that the rate of population growth in the intercensal period in Carrigtohill has fallen below trends at the county, provincial and national level. However, this was preceded by substantial population growth of 36.72 % between the 2006-2011 census periods.

Employment

4.42 The closest Social Welfare Office to the application site within Cork is in Midleton, which covers the areas of Midleton, Carrigtwohill, Castlemartyr, Ballycotton and Cloyne. According to the August 2018 Live Register statistics, there were 1,493 persons in the Midleton area on the live register. This figure has dropped from 2,188 in August 2016 and 2,758 in August 2015. During the recession, the figure peaked at 3,515 in February 2011.

4.43 At a national level, on a seasonally adjusted basis, the Live Register total recorded a monthly decrease of 6,800 (-3.1%) in August 2018, reducing the seasonally adjusted total to 209,900. The number of persons on the Live Register in August 2018 is also the lowest number recorded in the seasonally adjusted series since June 2008. In June 2008, figures for the live register in Midleton recorded 1,492 persons.

¹ <http://census.cso.ie/sapmap/>

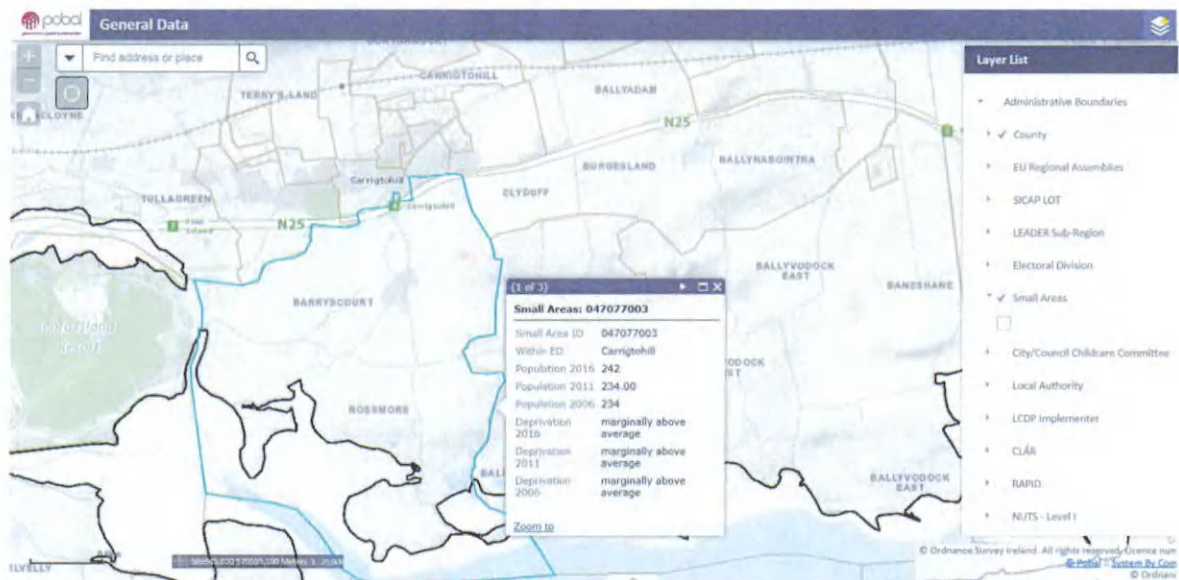


Figure 4.1 Extent of small area ID 047077003 (Source: Pobail)

- 4.44 The application area is located in the electoral division of Carrigtohill. According to the results of the 2016 Census, of the 5,227² people aged 15 years or older in Carrigtohill ED, some 3,294 were at work, 34 were looking for their first job and 277 were unemployed. Others were students, working in the home, retired, unable to work or other.
- 4.45 The population of Carrigtohill and County Cork categorised by occupation³ at the time of Census 2016 is shown in Table 4.2 below. This shows that the population of Carrigtohill is more likely to be engaged as managers, directors, and senior officials and in associate professional and technical occupations than the population of the wider county. The population of Carrigtohill is also less likely to be engaged in skilled trades occupations but more likely to be engaged as process, plant and machine operatives than the County as a whole.

Table 4-2
Population of Carrigtohill ED and County Cork by Occupation

Occupation	CARRIGTOHILL		COUNTY CORK	
	No.	%	No.	%
Managers, Directors and Senior Officials	287	8.0	14,784	7.5
Professional Occupations	629	17.6	35,269	17.9
Associate Professional and Technical Occupations	421	11.7	21,858	11.1

²http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=ED3409&Geog_Code=2AE196291ADE13A3E055000000000001#SAPMAP_T8_801

³[http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=CTY31&Geog_Code=2AE19629149613A3E0550000000000001#SAPMAP_T13_1301](http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=CTY31&Geog_Code=2AE19629149613A3E055000000000001#SAPMAP_T13_1301)

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	CARRIGTOHILL		COUNTY CORK	
Administrative and Secretarial Occupations	343	9.6	18,440	9.3
Skilled Trades Occupations	453	12.6	33,961	17.2
Caring, Leisure and Other Service Occupations	241	6.7	14,365	7.3
Sales and Customer Service Occupations	264	7.3	13,076	6.6
Process, Plant and Machine Operatives	398	11.1	16,303	8.3
Elementary Occupations	311	8.7	14,782	7.5
Not stated	224	6.2	13,512	6.8
Total	3,571	100%	196,350	100%

4.46 A breakdown of the industry in which those at work are employed⁴ at the time of Census 2016 is provided in Table 4.3 below. This shows that the population of Carrigtohill is more likely to be engaged in manufacturing and in transport and communications industries than the wider population in Co. Cork. The population of this ED is also marginally less likely to be employed in the building and construction industries as well as professional services.

Table 4-3
Persons at Work in Carrigtohill ED and County Cork by Industry

	CARRIGTOHILL		COUNTY CORK	
Industry	No.	%	No.	%
Agriculture, forestry and fishing	72	2.1	11,946	6.3
Building and construction	160	4.8	10,035	5.5
Manufacturing industries	714	21.6	29,307	16.2
Commerce and trade	725	22.0	39,716	22.0
Transport and communications	300	9.1	13,343	7.4
Public administration	149	4.5	8,409	4.6
Professional services	708	21.4	41,819	23.2
Other	466	14.1	25,315	14.0

⁴[http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=CTY31&Geog_Code=2AE19629149613A3E0550000000000001#SAPMAP_T13_1301](http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=CTY31&Geog_Code=2AE19629149613A3E055000000000001#SAPMAP_T13_1301)

	CARRIGTOHILL		COUNTY CORK	
Total	3294	100.00%	179,890	100.00%

4.47 The Pobal HP Deprivation index is Ireland's most widely used social gradient metric, which scores areas in terms of affluence or disadvantage. The index uses information from the census, such as employment, age profile and educational attainment, to calculate this score. The index is used by various state agencies and government departments to target resources towards disadvantaged areas. The 2016 Pobal HP Deprivation Index shows Carrigtohill with a score of 6.20 which in terms of affluence is marginally above the national average. The nearest EDs where deprivation is recorded as below average are Midleton Urban and Cobh Urban at -4.65 and -3.64 respectively.

Local Receptors

- 4.48 The application site is surrounded by the Cork Harbour estuary to the south and farmland to north. According to the department of Housing, Planning and Local Government website www.myplan.ie, there are a number of residential address points in the immediate vicinity of the entrance to the existing quarry. The dwelling closest to the quarry extraction area is located approximately 180m to the north of the application site.
- 4.49 The closest retail outlets, schools and community facilities are located in the nearby town of Carrigtohill. Fota Island Resort and Wildlife Park is located approximately 2km to the west.
- 4.50 Figure 4.2 identifies local receptors within the locality and also shows 500m and 1000m offsets from the application boundary for the proposed development.

IMPACT ASSESSMENT

Evaluation Methodology

4.51 The evaluation of effects on employment, the economy, human health and amenity comprises a qualitative assessment based on the quantitative and qualitative analysis of potential effects on the environment undertaken in other chapters of this EIAR. The assessment takes into account a review of relevant literature and professional judgement in relation to impact on population and human health.

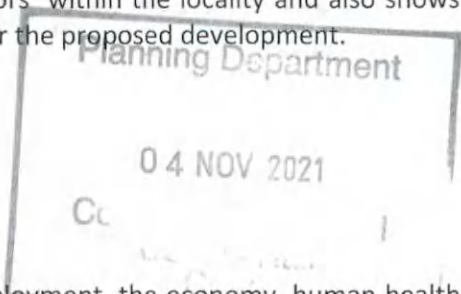
Economy

Construction Stage Impacts

4.52 The planning application is for deepening the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts on economy have been identified.

Operational Stage Impacts

4.53 Rossmore Quarry is a significant source of raw materials for the construction sector. The continued development of proven limestone aggregate reserves at the site is required to ensure that Lagan



meets the demands of the market(s) they have built up in the region, including supply, to the local construction industry, infrastructure projects and Local Authorities.

- 4.54 The proposed development is of strategic importance in relation to the construction of new housing in particular and this is underlined by national objectives in relation to house building. The recently adopted National Planning Framework targets the delivery of 550,000 additional households in Ireland to 2040 (National Policy Objective 32).
- 4.55 This is a medium-term, temporary, direct and positive effect on the local and regional economy.

Employment

Construction Stage Impacts

- 4.56 The planning application is for deepening of the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts on employment have been identified.

Operational Stage Impacts

- 4.57 The proposed development will secure the continued direct employment of 8 no. people in addition to a number of indirect employees, such as crushing contractors, HGV drivers, maintenance contractors, local suppliers, etc.
- 4.58 Therefore, the proposal will secure the continued employment at the site for the duration of the extraction development i.e., 20 years.
- 4.59 This is a medium-term, temporary, direct and positive effect on employment.

Post – Operational Stage Impacts

- 4.60 Following the cessation of operations, the application site will be restored. The cessation of operations after restoration would result in the loss of jobs related to the extraction and restoration operations. Some short-term employment would be provided in relation to the aftercare of the restored site over a period of two years.
- 4.61 In the long term, the closure of the quarry will result in a neutral effect on employment.

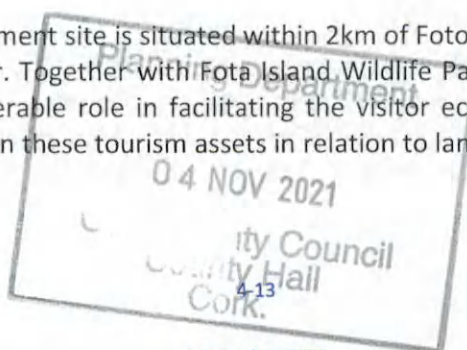
Tourism

Construction Stage Impacts

- 4.62 The planning application is for deepening of the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts on tourism have been identified.

Operational Stage Impacts

- 4.63 The proposed development site is situated within 2km of Foto Island Resort which averages about 400,000 visitors a year. Together with Foto Island Wildlife Park and the Castlemartyr Resort this facility plays a considerable role in facilitating the visitor economy in the east Cork area. The potential for impacts on these tourism assets in relation to landscape and visual impact and traffic



receptors has been considered in chapter 13 and 14 respectively. This shows that the potential for adverse effects on existing tourism assets is negligible.

Human Health

4.64 The key pathways in relation to human health in this instance are Water (EIAR Chapter 7), Air Quality (EIAR Chapter 8) and Noise & Vibration (EIAR Chapter 10).

Construction Stage Impacts

4.65 The planning application is for deepening of the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts on human health have been identified.

Operational Stage Impacts

4.66 The operational stage of the development would relate to the extraction & processing of limestone and the restoration of the application area.

4.67 During the operational stage, the potential impacts on air, noise & vibration, and water may include the following:

- the generation of dust, noise and groundborne vibration, through the extraction & processing of limestone;
- the generation of noise by the operation of plant and machinery;
- the leakage or spillage of fuels or other materials to soil and, ultimately to groundwater or surface water.

4.68 As outlined in Chapters 7, 8 and 10 of this EIAR, existing best practice mitigation and management measures are in place at the quarry and will continue to be implemented. There is also an established environmental monitoring programme in place at the quarry. Based on these mitigation and management measures, and the results of the environmental monitoring programme there is no predicted residual impact in respect of land, soils and geology, no residual impacts are predicted in relation to water, dust impacts will be insignificant, residual noise impacts will be negligible, and the effect of the development on traffic and transport is predicted not to be significant. On this basis, it is considered that there would be no likely significant effect on human health during the operational stage.

Post – Operational Stage Impacts

4.69 Following restoration, the potential effects on air and noise would cease owing to the cessation of extraction operations, the cessation of machinery operation and the growth of vegetation. The implementation of mitigation measures during the operational stage and the removal of all plant and machinery during restoration will ensure that there would no residual effects on soil and water during the post-operational stage.

4.70 Based on the existing best practice mitigation and management measures implemented during the operational stage, the potential for residual effects related to soil and water during the post operational stage are not predicted, no residual impacts are predicted in relation to water, dust impacts will be insignificant, residual noise impacts will be negligible, and the effect of the

development on traffic and transport is predicted not to be significant. On this basis, it is considered that there would be no likely significant effect on human health during the post-operational stage.

Amenity

4.71 The key matters in relation to amenity in this instance are Air Quality (Chapter 8), Noise (Chapter 10), Landscape (Chapter 13) and Traffic (Chapter 14).

Construction Stage Impacts

4.72 The planning application is for deepening of the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts on amenity have been identified.

Operational Stage Impacts

4.73 During the operational stage, the potential impacts on air, noise, and traffic include the following:

- the generation of dust noise and groundborne vibration, through the extraction & processing of limestone;
- the generation of noise by the operation of machinery;
- the generation of traffic by the export of limestone and value-added products from the site.

4.74 The landscape and visual impact assessment (refer to EIAR Chapter 14 – Landscape) had regard to the Cork County Draft Landscape Strategy and has shown that the landscape and visual effects, due to the proposed development on the whole will be minor-negligible or less. While located in a High Value Landscape, the location and design of the proposed development ensures that it does not become any more visible than the existing quarry development, which is substantially screened. No skylines or ridgelines will be affected by the proposed development.

4.75 The visual assessment has shown that the proposed development will not be visible in conjunction with sea/river views (i.e. the Great Island Channel) in the vast majority of such views within the study area. In the small number of available views the visual effects were assessed as minor-negligible. It was concluded that the composition and visual amenity of these views will be barely altered, and it is therefore considered that the character of these views will be preserved. Furthermore, the visual assessment has also shown that there will be no views of the proposed development from scenic routes within the study area.

4.76 As outlined in Chapters 8 – Air Quality, 10 – Noise & Vibration and 14- Traffic of this EIAR, existing best practice mitigation and management measures are in place at the quarry and will continue to be implemented. Based on these measures, dust impacts will be insignificant, residual noise impacts will be negligible, and the effect of the development on traffic and transport is predicted not to be significant. On this basis, it is considered that there would be no likely significant effect on amenity during the operational stage.

Post – Operational Stage Impacts

4.77 The proposed development constitutes the deepening of the existing quarry within the permitted extraction area. The quarry will be restored to a natural habitat area resulting in the introduction of a permanent lake within the quarry void together as part of the final restoration works. This waterbody would be substantially screened from the surrounding landscape by existing perimeter

earthworks and vegetation along the site boundaries. There would be no change in terms of loss of agricultural land or loss of landscape elements such as trees, hedgerows and woodland.

- 4.78 Following restoration, the potential effects on air, noise, and traffic related to the proposed development would cease owing to the cessation of extraction operations and the completion of restoration operations and the growth of vegetation. On this basis, it is considered that there would be no likely significant effect on amenity during the post-operational stage.

Unplanned Events

- 4.79 According to the EPA guidelines, unplanned events, such as accidents, can include “*spill from traffic accidents, floods or land-slides affecting the site, fire, collapse or equipment failure on the site*”. The 2014 EIA directive refers to “*major accidents, and/or natural disasters (such as flooding, sea level rise, or earthquakes)*”.
- 4.80 In this instance, the vulnerability of the proposed development to accidents, unplanned events or natural disasters is relatively limited owing to the established nature of the techniques and procedures to be followed, the material to be handled on site and the rural location of the proposed works remote from sensitive receptors.
- 4.81 Unplanned events in relation to the proposed development could potentially relate to:
- instability following the removal and placement of materials;
 - spill from traffic accidents;
 - flooding.
- 4.82 Instability following the placement of materials is unlikely to have any significant impacts on employment, human health or amenity, particularly beyond the site. In addition, works will be undertaken to ensure that the ground is graded appropriately, and that no large-scale instability occurs in the short term or long term.
- 4.83 Chapter 14 - Traffic of this EIAR concludes that the local road network will continue to operate within capacity for each of the assessment years 2021, 2022, 2027 and 2037 and that the quarry will have a negligible impact on the operation of the road network in the vicinity. The risk of an accident resulting in a spillage is considered to be no greater in relation to this development than for any other form of development that relies on the transportation of goods and materials by HGVs. The potential for significant impacts on employment, human health in the wider population or amenity as a result of a road spillage is likely to be low and any such effects would likely be temporary.

Cumulative / Synergistic Impacts

- 4.84 The environmental consideration that has the greatest potential for significant cumulative impact on population and human health, and, in particular, on amenity, is traffic. This is assessed and discussed in the traffic impact assessment presented in Chapter 14 of this EIAR. That assessment concludes the traffic generation associated with the development is unlikely to give rise to significant impact upon the carrying capacity of the road network.

Transboundary Impacts

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

Interaction with Other Impacts

- 4.86 It is not anticipated that the effects of the proposed development on population and human health would interact significantly with other impacts. The impact of residual effects relating air, noise, water, soil, landscape and traffic on employment, human health and amenity are addressed above.

'Do-nothing Scenario'

- 4.87 In a 'do-nothing scenario', the limestone resource at Rossmore would not be exploited and the permitted extraction operations would cease. This would result in an adverse effect on employment and the local economy because the workforce that is directly and indirectly employed by the existing permitted extraction works would not continue to be employed in the extraction of material from the proposed extraction area.

MITIGATION MEASURES

Construction Stage

- 4.88 The planning application is for deepening of the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts have been identified that would require mitigation.

Operational Stage

- 4.89 Mitigation measures to be adopted in relation to population and human health during the operational stage will relate to minimising the effect of the development on surrounding local receptors in relation to dust, noise, water, soil, traffic and landscape. The existing mitigation and management measures implemented at the quarry relate primarily to avoidance, prevention and reduction and are discussed in Chapters 7 - Water, 8 – Air Quality, 10 – Noise & Vibration, 13 - Landscape and 14 - Traffic of the EIAR.

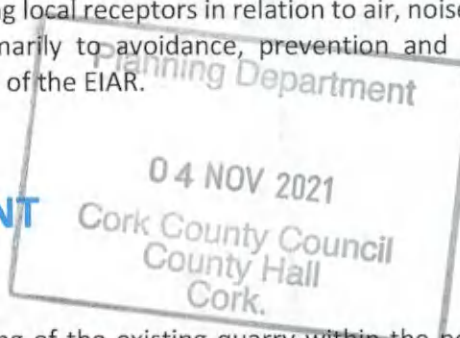
Post – Operational Stage

- 4.90 Consistent with the nature of the proposed final restoration works following permanent cessation of quarrying activities a number of mitigation measures will be adopted in relation to population and human health during the post-operational stage. Such measures will be similar to the existing mitigation and management measures implemented at the quarry and relate to minimising the effect of the development on surrounding local receptors in relation to air, noise, water, traffic and landscape. These measures relate primarily to avoidance, prevention and reduction and are discussed in Chapters 7, 8, 10, 13 and 14 of the EIAR.

RESIDUAL IMPACT ASSESSMENT

Construction Stage

- 4.91 The planning application is for deepening of the existing quarry within the permitted extraction area. No topsoil stripping will be required. As such no construction stage impacts or residual impacts will arise.



Operational Stage

4.92 As shown in Chapters 7, 8, 10, 12 and 14 of this EIAR, the mitigation and management measures would successfully eliminate or reduce the effects of the proposed development during the operational phase to acceptable levels. No specific mitigation measures are required in relation to human health and population.

Post – Operational Stage

4.93 As shown in Chapters 7, 9, 10, 12 and 14 of this EIAR, the mitigation and management measures would successfully eliminate or reduce the effects of the proposed development during the post-operational phase to acceptable levels. No specific mitigation measures are required in relation to human health and population.

MONITORING

4.94 As outlined in Chapters 7, 8 and 10 of this EIAR, monitoring in relation to the proposed development will continue to be undertaken in respect of noise and vibration (blasting), air quality (dust deposition), and water . On this basis, no specific monitoring is required in relation to population and human health.



REFERENCES

Central Statistics Office Census 2011

Central Statistics Office Census 2016

Environmental Protection Agency (2017). *Guidelines on the Information to be contained in Environmental Impact Assessment Reports*. EPA.

Department of Housing, Planning and Local Government (August 2018). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*

Department of Housing, Planning and Local Government (February 2018). *Project Ireland 2040, National Planning Framework*.

Cork County Council (2014). *Cork County Development Plan 2014*



FIGURES



Planning Department
04 NOV 2021
County Council
County Hall
Cork.



NOTES

1. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND.
2. AERIAL PHOTOGRAPHY CARRIED OUT BY SLR CONSULTING MARCH 2021.

LEGEND

	APPLICATION AREA
	RECEPTOR: RESIDENCE
	RECEPTOR: COMMERCIAL
	1 KM OFFSET
	500 M OFFSET

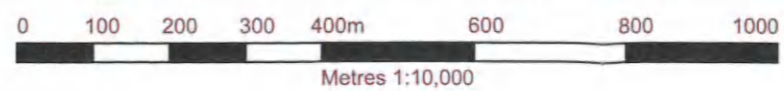
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LAGAN MATERIALS LTD.
 EXISTING LIMESTONE QUARRY
 ROSSMORE TOWNLAND, CARRIGTWOHILL,
 CO. CORK
LOCAL RECEPTOR LOCATIONS

FIGURE 4-2

Scale: 1:10,000 @ A3
 Date: SEPTEMBER 2021



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5. Biodiversity

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INTRODUCTION

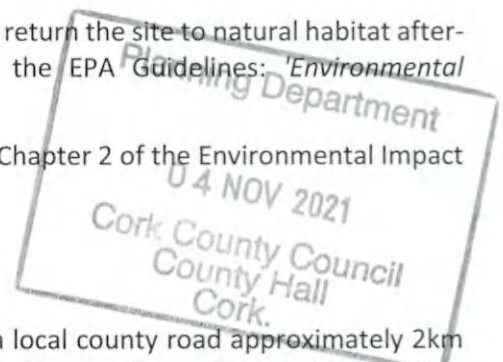
- 5.1 This Biodiversity chapter forms part of the Environmental Impact Assessment Report (EIAR) which provides supporting information to accompany a planning application to Cork County Council submitted by Lagan Materials Ltd. in respect of further development at their existing quarry at Rossmore, Carrigtwohill, Co. Cork.

Background and Brief Project Description

- 5.2 The site occupies ground with elevations ranging between -20 m OD and 20 m OD. The lower quarry floor currently extends to a maximum depth of -20 m OD, with the current planning permission authorising extraction to -20 m OD.
- 5.3 The proposed development being applied for under this current planning application is similar to that previously granted under An Bord Pleanála reference number 04.QD.0010 and will consist of:
- Deepening of the existing quarry extraction area by 2 no. 15 metre benches from -20m OD to -50 m OD, along with minor amendments to the permitted quarry layout (Plan File ref. no's: S/02/5476 & ABP Ref. PL04.203762 and ABP Ref. PL04.QD.0010) all within the existing permitted quarry footprint and the continued use of the existing water management system (settlement pond / infiltration pond system permitted under PL04.QD.0010) for the life of the proposed development, within an application area of c. 12.6 hectares.
 - An extraction capacity of up to 375,000 tonnes per annum is sought to provide the applicant with the ability to respond to demand for aggregates for large infrastructure projects in the Region.
 - Permission is sought for twenty years plus two years for final restoration (total duration 22 years).
- 5.4 The application is made in accordance with the requirements of the Planning and Development Regulations 2001-2015 (as amended).
- 5.5 Upon the cessation of extraction operations, it is proposed to return the site to natural habitat after-use, which is one of the beneficial after uses listed in the EPA Guidelines: 'Environmental Management in the Extractive Industry' (2006).
- 5.6 The proposed development / project is described in detail in Chapter 2 of the Environmental Impact Assessment Report (EIAR).

General Description of the Site

- 5.7 The development site is located in a coastal setting and on a local county road approximately 2km south of Carrigtwohill and 6km southwest of Midleton, Co. Cork. It is located approximately 2km south of N25 National Primary Road (E-30 European Route) which links Cork City to Rosslare Europort.
- 5.8 The development site is located in the townland of Rossmore, Carrigtwohill, Co. Cork. Access to the development site is via an existing access to the public road to the north which connects to the N25 National Primary Road further to the north. The local county road forms the northern site boundary which links the R624 Regional Road to the west at Fota and the N25 National Primary Road at



Middleton. Beyond the southern boundary of the development site is an access right of way to the adjacent Kilsaran quarry property lands, and Rossmore Bay, part of the Cork Harbour channel.

- 5.9 Beyond the immediately adjacent land, there is Fota Island Wildlife Park (2km to the northeast), the commercial/retail/residential centre of Carrigtwohill (2km to the north) and other extractive industries (2.5km to the north-east).
- 5.10 Existing site operations comprise of limestone extraction / processing and asphalt production. The site access is located to the southeast corner along with the wheelwash, weighbridge and site offices / canteen facility associated with the site. Crushing and screening is carried out on the quarry floor by mobile processing plant. Stockpiling of aggregate materials also takes place on the quarry floor. The settlement lagoon and infiltration pond system are located to the south-east, across the road from the quarry.
- 5.11 Residential development in the vicinity of the subject site is confined to single houses located along the local LP3619-0 road and other minor public roads to the east and north.

Purpose of the Chapter

- 5.12 The purpose of this biodiversity chapter is to inform the application for the further development of an existing permitted quarry in the townlands of Rossmore, Co. Cork. It will present the baseline data and assess the effects of the development on biodiversity, as well set out the mitigation to address potential impacts on biodiversity and ensure there are no significant residual effects on biodiversity. This chapter forms part of the EIAR that will be submitted with the application for permission to assist the competent authority, in this case Cork County Council, to carry out an Environmental Impact Assessment (EIA) of the proposal for further development at the site.

Evidence of Technical Competence and Experience

- 5.13 The ecological survey was carried out by SLR ecologist Michael Bailey MCIEEM in June 2021, and he also prepared this biodiversity chapter. SLR Technical Director Richard Arnold BSc MRes MCIEEM CEnv carried out the technical review of the biodiversity chapter.
- 5.14 Michael Bailey holds a BSc (Hons) in Biology and Ecology from the University of Ulster, and an MSc in Quantitative Conservation Biology from the University of the Witwatersrand, Johannesburg, South Africa. Michael is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). He has prepared Appropriate Assessments and Ecological Impact Assessments for a wide range of projects in Ireland and the UK.
- 5.15 Richard Arnold is a Technical Director with SLR. Richard has 23 years of experience as a consultant ecologist, which has included preparing and overseeing assessments under the Habitats Regulations/Directive for multiple projects, including small and large infrastructure projects. Richard carried out the technical review of this report.

Relevant Legislation and Planning Policy

- 5.16 The main pieces of relevant legislation are as follows:

- The Habitats Directive 92/43/EEC.
- The Birds Directive 2009/147/EC.



- European Communities (Birds and Natural Habitats) Regulations 2011 – 2015.
- Planning and Development Acts 2000 to 2020 - PART XAB.

5.17 The relevant sections of the legislation and the local planning policy are summarised in Appendix A of this report.



METHODOLOGY

- 5.18 The methods used to carry out the survey of the Site, to evaluate the ecological value and to prepare the biodiversity chapter is outlined in this section. The assessment methodology for this proposal was developed using the standard professional impact assessment guidance published in 2018 by Chartered Institute of Ecology and Environmental Management (CIEEM).

Scope of the Chapter

- 5.19 The scope of this Biodiversity Chapter is to identify potential impacts likely to occur as a result of the further development of the existing quarry at Rossmore, Carrigtwohill, Co. Cork and to determine if the effects on biodiversity are significant in the absence of mitigation. The scope of the report includes the provision of mitigation, compensation and enhancement measures as required.

Zone of Influence

- 5.20 The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects because of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).
- 5.21 The zone of influence can be identified through review of the nature of the proposed development / works, the presence / absence of surface water receptors, the presence of ecological connectivity to the wider landscape and distance from known ecologically sensitive sites.

Desk Study

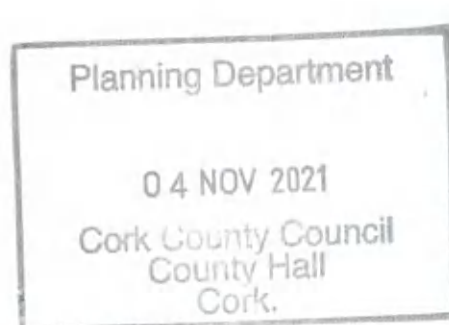
- 5.22 A desk study was carried out to collate the available existing ecological information in relation to the Site and the surrounding area were viewed using remote sensing of publicly accessible satellite imagery^{1&2} (accessed on 29 July 2021).
- 5.23 The websites of the National Parks and Wildlife Service (NPWS)³ and the National Biodiversity Data Centre (NBDC)⁴ were accessed for information (accessed 29 July 2021) on sites designated for nature conservation and on protected habitats and species known from the 2 km grid squares W87A and W87F within which the site is located (accessed 29 July 2021 – see Appendix B). Only records for the past 15 years are considered within this report as older records are unlikely to still be relevant given their age and the changes in land management that is likely to have occurred in the intervening period.

¹ <https://www.google.ie/maps>

² <http://www.bing.com/maps/>

³ www.npws.ie

⁴ <http://maps.biodiversityireland.ie/#/Map>



- 5.24 Cork County Council planning portal⁵ was accessed for information on other planning applications within the Site and immediate area (last accessed 29 July 2021). Cork County Council website was accessed for information on relevant planning policy to inform this report (accessed 29 July 2021).
- 5.25 Birds of Conservation Concern in Ireland (BoCCI), published by BirdWatch Ireland and the RSPB NI, is a list of priority bird species for conservation action on the island of Ireland. The BoCCI lists birds which breed and/or winter in Ireland and classifies them into three separate lists; Red, Amber and Green; based on the conservation status of the bird and hence their conservation priority. Birds on the Red List are those of highest conservation concern, Amber List are of medium conservation concern and Green List are not considered threatened. The BirdWatch Ireland website⁶ was accessed on 29 July 2021 for information on birds of conservation concern.
- 5.26 All bird species are protected under the Wildlife Acts 1976 – 2020 but for the purposes of this report only records of species within the last 15 years that are *red* or *amber* listed on BoCCI or listed on Annex 1 of the Birds Directive are included in the records generated by the NBDC and NPWS web searches (see Appendix B).
- 5.27 The conservation status of mammals, amphibians, reptiles, fish and protected flora within Ireland and Europe is using one or more of the following documents: Wildlife Acts (1976 - 2012), the Red List of Terrestrial Mammals (Marnell *et al.*, 2009), Ireland Red Lists No.5: Amphibians, Reptiles and Freshwater Fish (King *et al.* 2011), The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) and the EU Habitats Directive 92/43/EEC.
- 5.28 The existing (permitted) quarry at Rossmore has previously been subject to assessment for planning permission and the documents associated with this were reviewed during the desk study for this report. An Appropriate Assessment (AA) Screening report was prepared as a standalone document for the purposes of this planning application, and this was used to inform this report as appropriate. Other chapters prepared for this EIAR, such as Chapter 2 (Project Description), Chapter 8 (Air Quality) Chapter 10 (Noise), Chapter 13 (Landscape) and Chapter 7 (Water), were also reviewed to inform this report.

Field Survey

- 5.29 The Site was visited on 09 June 2021 by SLR Ecologist Michael Bailey MCIEEM who carried out an ecological walkover survey of the Site. The Site visit was carried out in dry, warm (17°C), clear weather conditions with little to no wind (Force 1⁷). The objective of the site visit was to undertake a walkover survey to better understand the biodiversity of the Site and to determine its ecological value.
- 5.30 A separate survey of just the settlement lagoon and infiltration area located to the east of the working quarry area was carried out on the morning of 30 September 2021. The survey was carried out in overcast conditions with light intermittent rain showers, light breeze (F2) and a temperature of 17°C.
- 5.31 Habitats were identified and classified to Level 3 of the standard Heritage Council classification scheme (Fossitt, 2000) during the walkover survey and used to compile habitat mapping of the Site.

⁵ <https://www.corkcoco.ie/planning/planning-enquiry-online-submissions>

⁶ <https://www.birdwatchireland.ie/>

⁷ Beaufort Scale <https://www.rmets.org/resource/beaufort-scale>



The dominant plant species present in each habitat type were recorded. Species nomenclature follows Parnell & Curtis (2012) for scientific and English names of vascular plants.

- 5.32 Mammal tracks, signs or direct observations were recorded during the walkover survey of the Site. Incidental sightings of birds, mammals or amphibians were also noted. The habitats present were also evaluated in terms of suitability to support foraging bats. The suitability of the habitats for roosting and commuting and foraging bats was evaluated using the Bat Conservation Trust guidelines.⁸

Impact Assessment

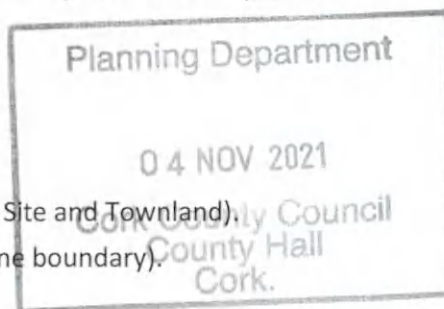
- 5.33 The ecological evaluation and assessment within this chapter has been undertaken with reference to relevant parts of the 2018 Guidelines for Ecological Impact Assessment in the UK and Ireland developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, September 2018). Although this is recognised as current good practice for ecological assessment, the guidance itself recognises that it is not a prescription about exactly how to undertake an ecological impact assessment (EclA); rather, they “provide guidance to practitioners for refining their own methodologies”.
- 5.34 For the full guidance, refer to <https://www.cieem.net/data/files/ECIA%20Guidelines.pdf>. The approach to impact assessment also has regard to advice set out in the EPA draft guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) published in August 2017 (EPA 2017).

Important Ecological Features

- 5.35 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and / or species rarity; the extent to which such habitats and / or species are threatened throughout their range, or to their rate of decline.

Evaluation: Determining Importance

- 5.36 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known / published accounts of distribution and rarity where available, and professional experience:
- International (European).
 - National (Ireland).
 - County (Cork)
 - Townland (Rossmore).
 - Local (intermediate between the Site and Townland).
 - Site (Area shown within the redline boundary).



⁸<https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition>

- 5.37 The approach to impact assessment as set out in CIEEM guidelines only requires that ecological features (habitats, species, ecosystems and their functions/processes), that are considered to be important and potentially affected by the proposed development are carried forward to detailed assessment. It is not necessary to carry out detailed assessment of receptors that are sufficiently widespread, unthreatened and resilient to impacts from the proposed development and will remain viable and sustainable.

Impact Assessment

- 5.38 Where appropriate, the impact assessment process involves:
- identifying and characterising impacts;
 - incorporating measures to avoid and mitigate (reduce) these impacts;
 - assessing the significance of any residual effects after mitigation;
 - identifying appropriate compensation measures to offset significant residual effects (if required); and
 - identifying opportunities for ecological enhancement.
- 5.39 When describing impacts, reference has been made to the following characteristics, as appropriate:
- Positive or negative;
 - Extent;
 - Magnitude;
 - Duration;
 - Timing;
 - Frequency; and
 - Reversibility.
- 5.40 The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.
- 5.41 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:
- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
 - Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

Significant Effects

- 5.42 The 2018 CIEEM guidance sets out information in paragraphs 5.24 through to 5.28 of the guidance document which describes the concept of ecological significance. Significant effects are qualified with

reference to an appropriate geographic scale, and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

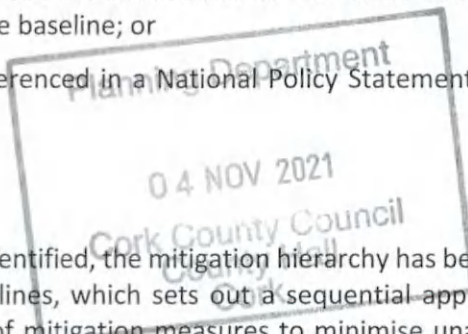
- 5.43 A significant effect, for the purposes of EclA, is defined as an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.
- 5.44 The nature of the identified effects on each assessed feature is characterised. This is considered, along with available research, professional judgement about the sensitivity of the feature affected, and professional judgement about how the impact is likely to affect the site, habitat, or population’s structure and continued function. Where it is concluded that an effect would be likely to reduce the importance of an assessed feature, it is described as significant. The degree of significance of the effect takes into account the geographic context of the feature’s importance and the degree to which its interest is judged to be affected.

Cumulative Effects

- 5.45 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in combination with impacts of other proposed or permitted plans and projects, can result in significant effects.
- 5.46 Other plans and projects that should be considered when establishing cumulative effects are:
- proposals for which consent has been applied but which are awaiting determination;
 - projects which have been granted consent, but which have not yet been started or which have been started but are not yet completed (i.e. under construction);
 - proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined;
 - constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
 - developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan.

Mitigation

- 5.47 Where significant effects have been identified, the mitigation hierarchy has been taken into account, as suggested in the 2016 EclA Guidelines, which sets out a sequential approach of avoidance of impacts where possible, application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, along with any necessary compensation measures, and opportunities for enhancement incorporated, residual impacts have then been identified.



Limitations / Difficulties Encountered

- 5.48 The walkover survey was carried out within the optimum survey period during suitable weather conditions and the Site was easily accessible. There were no limitations to the survey of the Site.



BASELINE ECOLOGICAL CONDITIONS

- 5.49 This section sets out the baseline ecological conditions at the Site using the findings of the desk study and survey.

Desk Study

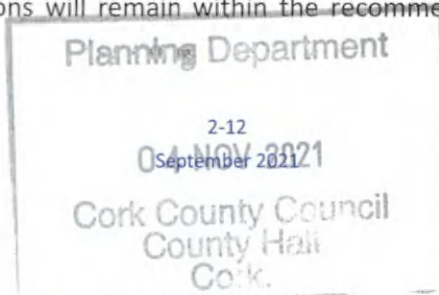
- 5.50 The sites designated for nature conservation within 2 km of Rossmore Quarry are discussed in the following section. The 2 km radius was selected as the search area as the zone of influence of quarrying typically would not extend beyond 2 km unless there are surface water pathways or other ecological connections to Natura 2000 sites outside this distance. The use of 2 km as a potential zone of influence is therefore applying a precautionary approach. The sites designated for nature conservation within 5 km of the Site are shown on **Figure 5.1**.
- 5.51 The results of the online search for rare and /or protected flora and fauna are also discussed within this section.

Natura 2000 (European Sites)

- 5.52 The existing permitted Rossmore Quarry is not within a site designated for nature conservation or subject to any nature conservation designations. Two Natura 2000 Sites are adjacent to the Site boundary, Great Island Channel SAC 001058 and Cork Harbour SPA 004030.
- 5.53 There are no other Natura 2000 sites within 2 km of the Site boundary; the Site is not connected via ecological features or surface water pathways to any Natura 2000 sites beyond 5 km and Natura 2000 sites (and their features of interest) beyond 2 km not previously discussed can be considered to be sufficiently distant from the quarry at Rossmore to not be affected by the potential impacts and resultant effects arising from proposed deepening of the existing permitted quarry.
- 5.54 There will be no loss of habitat within the Natura 2000 sites within the potential zone of influence and there will be no barrier to movement within the estuary. Any increase in noise, vibration and dust emissions will remain within the recommended emission limit values for the sector, while emissions to water are subject to an existing discharge licence and will not increase significantly as a result of deepening of the quarry. It is not considered likely that noise and vibration or emissions to air and water could cause significant effects that could undermine the conservation objectives of the Natura 2000 sites. Natura 2000 sites are therefore scoped out and excluded from any further consideration in this report.
- 5.55 A separate AA Screening report has been prepared in support of the planning application to assess the potential effects of the proposed development on any Natura 2000 sites near Rossmore quarry.

Natural Heritage Areas (NHA) / Proposed Natural Heritage Areas (pNHA)

- 5.56 There are no Natural Heritage Areas within 2 km of the Site boundary. There is one proposed Natural Heritage Areas (pNHAs) within 2 km of the Site boundary, Great Island Channel pNHA, refer to **Figure 5.1**
- 5.57 Great Island Channel pNHA is adjacent to the Site boundary. However, there will be no loss of habitat within the pNHA and there will be no barrier to movement within the estuary. Any increase in noise, vibration and dust emissions will remain within the recommended emission limit values for the



sector, while emissions to water are subject to an existing discharge licence and will not increase significantly as a result of deepening of the quarry.

- 5.58 The pNHA site is not likely to be affected by the deepening of the quarry at Rossmore and can therefore be scoped out and excluded from further consideration in this report.

Rare and Protected Flora and Fauna

- 5.59 The NBDC database was searched for records within the 2 km grid squares W87A and W87F within which the Site is located. The records returned are of varying ages so for the purposes of preparing this report only the relevant records dated within the last 15 years, are listed in Appendix B of this document.
- 5.60 The absence of recent (within 15 years) records of species from the NBDC database does not necessarily imply that a species does not occur within the search area rather it has not formally been recorded as present. Similarly, the presence of a record for a protected species within the 2 km grid squares does not mean that the species is present within the Site. The majority of results returned for the 2 km grid squares, as can be seen in Appendix B, are waterbirds associated with Cork Harbour.
- 5.61 As there is no expansion outside the existing quarry footprint significant effects on rare and protected species of flora and fauna recorded in this area are not expected to occur.

Designated Shellfish Waters

- 5.62 The Cork Great Island North Channel Shellfish Area (39) lies 130m south of the quarry extraction area.
- 5.63 Information provided in the Cork Great Island North Channel Shellfish Area, Characterisation Report Number 39 produced by the Department of Housing, Local Government and Heritage as part of the Pollution Reduction Programme (2012 update) reports that the key pressure on the shellfish population in this area are from urban wastewater systems and on-site wastewater treatment systems. It also reports that none of the quarries operating within 2km of this area have been designated as 'at risk' of impacting their surrounding environments.
- 5.64 The potential effect on the shellfish area has been assessed during the application for the Discharge Licence WP(W)08/18(R).
- 5.65 Emissions to water are subject to an existing discharge licence and will not increase significantly as a result of deepening of the quarry and therefore designated shellfish areas can be scoped out and excluded from further consideration in this report.

Field Survey

- 5.66 The habitats and species recorded within the existing quarry site are described, classified and evaluated in this section of the report, and shown on **Figure 5-2** and described further in the sections below.

Active Quarry (ED4)

- 5.67 Active Quarry is the dominant habitat type within the Site and can be broadly described as the quarry void with exposed rock faces (Plate 5.1), and bare ground sparsely recolonising with ruderal species but where the extent of vegetation is such that it is not classified as Recolonising Bare Ground (ED3), see section below. The active quarry void is largely bare of vegetation cover.

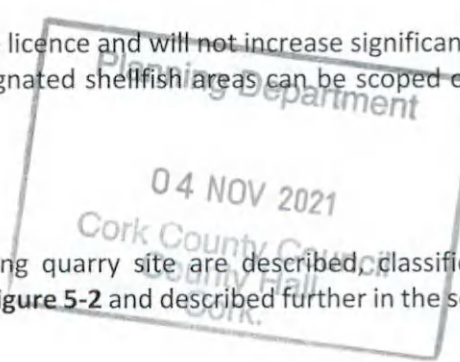




Plate 5.1: Area of quarry void within the proposed project area

- 5.68 Around the edges of the quarry void species such as butterfly bush *Buddleja davidii*, gorse *Ulex europaeus* and bramble *Rubus fruticosus* agg. are encroaching where work has ceased or where there is little or no activity.
- 5.69 The active quarry habitat within Rossmore quarry would be evaluated as important at Site level. The active quarry will continue to operate as before and is not expected to be significantly affected by the proposal. Active quarry habitat can therefore be scoped out of further consideration in this report.

Scrub WS1/ Recolonising Bare Ground (ED3)

- 5.70 Scrub is present along most of the quarry boundaries. Dense bramble dominates the northern berm of the quarry around the edge of the quarry void. The scrub, especially along the edge of the eastern road, includes species such as immature ash *Fraxinus excelsior*, willow *Salix* sp., maple *Acer* sp., beech *Fagus sylvatica* and hawthorn *Crataegus monogyna*. Other species present here include petty spurge *Euphorbia peplus*, great mullein *Verbascum thapsus*, creeping thistle and creeping cinquefoil *Potentilla reptans*.
- 5.71 Areas of recently emerged vegetation have become established on previously disturbed areas of the Site where soil overburden is stored. These areas have since been left unmanaged and floral species have begun to recolonise (Plate 5.2).

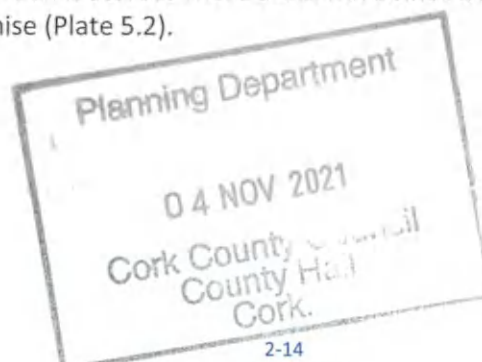




Plate 5.2: recolonising vegetation on edge of quarry void

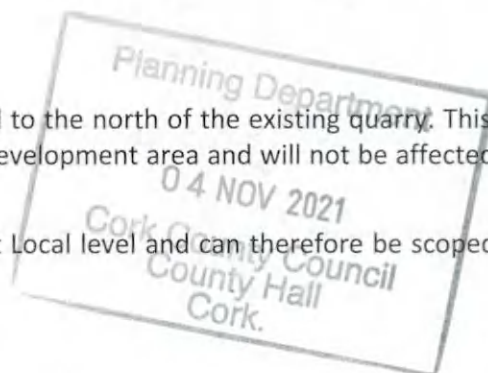
- 5.72 Ruderal and woody species occurring where vegetation is recolonising the bare ground, and not found in the quarry void, include butterfly bush, teasel *Dipsacus fullonum*, yellow-wort *Blackstonia perfoliata*, coltsfoot *Tussilago farfara*, yellow mignonette *Reseda lutea*, cats ear *Hypochaeris radicata*, creeping thistle *Cirsium arvense*, common centaury *Centaureum erythraea*, common ragwort *Senecio jacobea*, bramble, scarlet pimpernel *Anagallis arvensis*, self-heal *Prunella vulgaris*, wood sage *Teucrium scorodonia*, germander speedwell *Veronica chamaedrys* and fairy flax *Linum catharticum*.
- 5.73 It is not proposed to remove or reduce the areas of scrub or recolonising bare ground on the Site. Both habitat types within the Site would be evaluated as important at the Site level and can be scoped out of further consideration in this report.

Spoil and Bare Ground (ED2)

- 5.74 There is a small area of spoil on top of the northern berm which does not have any recolonising vegetation on it at the time of the survey. Left undisturbed this area will be recolonised and be reclassified as Recolonising Bare Ground (ED3), but it may be moved in the near future as part of a separate expansion plan.

Improved Grassland (GA1)

- 5.75 There is an area of agricultural improved grassland to the north of the existing quarry. This area is part of the quarry but falls outside the proposed development area and will not be affected by the proposed deepening of the quarry void.
- 5.76 This habitat type can be evaluated as important at Local level and can therefore be scoped out of further consideration in this report.



Other Artificial Lakes and Ponds

5.77 There is a settlement lagoon and infiltration area located to the east of the quarry working area and on the other side of the road (Figure 5.2) which is designed to receive all the waste water from both the quarry void floor and rain-water run-off from within the quarry (Plate 5.3). The main lagoon is comprised of a stone-lined pond and provides little habitat for aquatic fauna and flora.



Plate 5.3: Main Lagoon to the east of the quarry site

5.78 Water is discharged from the main lagoon into an infiltration area which contains some stagnant and slow flowing, shallow water which supports some aquatic and/or semi-aquatic (emergent) vegetation species e.g. rush *Juncus spp.* typical of artificial constructed areas and drainage ditches (Plate 5.4). The water in the infiltration area then percolates through to the groundwater.



Plate 5.4: Infiltration Pond adjacent to the main lagoon

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- 5.79 The proposed deepening operations will not affect the lagoon or infiltration area and no habitat will be lost or disturbed and therefore this habitat can be scoped out of further consideration in this report.

Species

- 5.80 Incidental sightings or signs of birds, mammals or amphibians were noted during the walkover survey of the Site i.e. no specific species surveys were carried out. The bird assemblage of the Site is typical of the type of habitats present within the Site with commonly occurring passerine species present. The scrub/hedgerow habitats along the boundary of the quarry may provide suitable nesting habitat for some bird species. However, as no scrub or hedgerow habitat is going to be removed as part of the development a detailed search for bird nests was not conducted. The bird population of the Site is evaluated as important at the Townland level.
- 5.81 The Site does not offer habitat suitable for bird species associated with the Cork Harbour SPA.
- 5.82 The small quarry lagoon and terrestrial habitats within the Site offer limited suitable habitat for amphibians and therefore it is considered likely that they are absent from the Site. Amphibians can therefore be scoped out of further consideration in this report.
- 5.83 Active quarry and scrub habitats are the dominant ecological features within the Site and are of negligible value to foraging and commuting bats as they are very large open areas within the landscape with very limited connectivity to the surrounding area. The bat population would be evaluated as important at the Site level and can therefore be scoped out of further consideration in this report.
- 5.84 Apart from some rabbits which were seen between the scrub vegetation and the improved agricultural grasslands at the north of the proposed development area, no sightings of other mammals, or their tracks and signs, were noted in the main quarry area during the site visit in June 2021. Badger *Meles meles* was found to be using the earth embankment between the main lagoon and the infiltration area in the south-east of the site in the September 2021 survey (Plate 5.5) and these animals were probably foraging in the farm lands to the north and east of this area.



Plate 5.5: Outlier badger sett next to the Infiltration Pond



- 5.85 The mammal population would be evaluated as important at the Site level. Mammals, including bats, can therefore be scoped out of further consideration in this report.

Invasive species

- 5.86 No plant or animal invasive species listed under the Third Schedule of the Habitats Directive and subject to restrictions under Regulations 49 and 50 were observed during the ecological site walkover in June 2021. Invasive species are scoped out of further consideration in this report.

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Summary Evaluation of Importance of Ecological Features

- 5.87 **Table 5-1** summarises the ecological features described and evaluated in the preceding section of this chapter. Following the approach in CIEEM guidelines only ecological receptors (habitats, species, ecosystems and their functions/processes), which are considered to be important and potentially affected by the proposed development are carried forward to detailed assessment. It is not necessary to carry out detailed assessment of features / receptors that are sufficiently widespread, unthreatened and resilient to impacts from the proposed development and will remain viable and sustainable.
- 5.88 The importance of the ecological features within the Site is summarised along with their legal status and a rationale, where appropriate, for not carrying forward any features for detailed assessment.

Table 5-1: Summary of Evaluation of Ecological Features

Ecological Feature		Scale at which Feature is Important ⁹	Comments on Legal Status and/or Importance
Natura 2000 sites		International (European)	Scoped out of further detailed assessment as significant effects are not likely.
NHA / pNHA		National	Scoped out of further detailed assessment as significant effects are not likely.
Rare and /or Protected Flora and Fauna		Local	Scoped out of the assessment as significant effects are not likely as no lands outside of the current active quarry void are to be altered.
Habitats		Site	The habitats found on site are generally species poor and offers limited suitable habitat for use by fauna. None of the habitats will be affected by the proposed development and they do not require detailed assessment.
Species	Birds	Townland	Wildlife Acts 1976 – 2020 confers protection on breeding birds using the Site. As no vegetation will be removed, no bird should be affected by the proposed development, and they do not require detailed assessment.



⁹ See section 5.29 of this report for geographic scale of importance.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

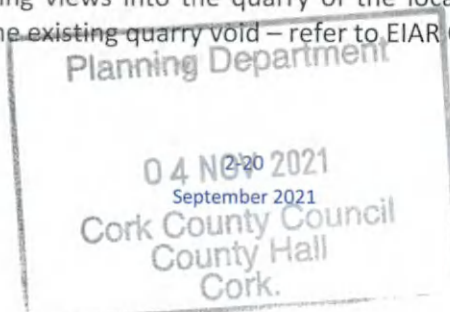
5.89 The detailed description of the proposal is provided in Chapter 2 (Project Description) of the EIAR. The following text provides a broad summary of the development.

Existing Development

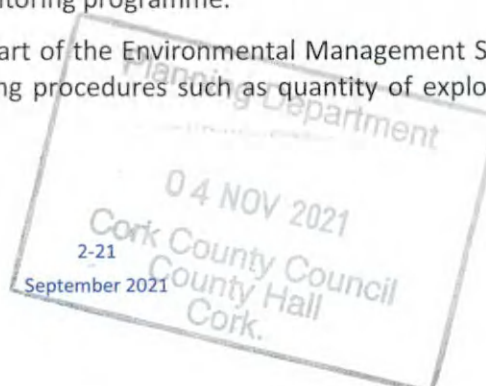
- 5.90 The site occupies ground with elevations ranging between -20 m OD and 20 m OD. The lower quarry floor currently extends to a maximum depth of -20 m OD, with the current planning permission authorising extraction to -20 m OD. The application area forms the existing quarry area and water management system (settlement pond / infiltration pond system permitted under PL04.QD.0010).
- 5.91 The existing quarry operations comprise extraction of limestone using conventional blasting techniques; processing (crushing and screening) of the fragmented rock using mobile plant and equipment to produce aggregates for use in the production of value-added products, road construction and site development works.
- 5.92 There is an existing asphalt plant located to the south of the application site. In addition, planning permission has been granted for a readymix concrete batching plant and ground limestone processing plant under (Plan File Ref. No. 20/04124). These plants have not yet been constructed, however, the potential for cumulative impacts from these plants has been assessed in the relevant chapters of this EIAR.
- 5.93 The operating asphalt plant is located to the south of the site adjacent to the site entrance, alongside the weighbridge, wheel-wash, staff offices and facilities, car park and associated facilities. The settlement lagoon system is located to the south-east of the site.

Proposed Development

- 5.94 The proposed development being applied for under this current planning application is shown on **Figure 2-1** and is similar to that previously granted under An Bord Pleanála reference number 04.QD.0010 and will consist of:
- Deepening of the existing quarry extraction area by 2 no. 15 metre benches from -20m OD to -50 m OD, along with minor amendments to the permitted quarry layout (Plan File ref. no's: S/02/5476 & ABP Ref. PL04.203762 and ABP Ref. PL04.QD.0010) all within the existing permitted quarry footprint and the continued use of the existing water management system (settlement pond / infiltration pond system permitted under PL04.QD.0010) for the life of the proposed development, within an application area of c. 12.6 hectares – refer to Figures 1.1 and 1.2;
 - An extraction capacity of up to 375,000 tonnes per annum is sought to provide the applicant with the ability to respond to demand for aggregates for large infrastructure projects in the Region;
 - Permission is sought for twenty years plus two years for final restoration (total duration 22 years).
- 5.95 Rossmore quarry has existed as a commercial quarrying operation since the 2000's and is an established part of the landscape. As all of the proposed development will be below the levels of the current operations, existing views into the quarry of the local road would be unchanged by the proposed deepening of the existing quarry void – refer to EIAR Chapter 13 - Landscape.



- 5.96 The planning application area of c. 12.6 hectares has been completely stripped of overburden and topsoil material.
- 5.97 No further stripping of topsoil or overburden materials will be carried out within the application area.
- 5.98 A hydrological / hydrogeological assessment has been carried out taking into consideration the existing water regime at the quarry site. It addresses mitigation measures to eliminate and/or minimise the potential impacts, if any, on surface water and groundwater – refer to Chapter 7 – Water.
- 5.99 Blasting is and will continue to be used within the quarry area to fragment the stone prior to processing (crushing / screening / washing etc.).
- 5.100 The processing of the extracted rock, into aggregate products, will consist of crushing and screening by mobile processing plant within the quarry void.
- 5.101 In accordance with condition 15 of the existing planning permission quarry operations will continue to be carried out between 07.00 – 18.00 hrs Monday to Friday and 07.00 – 14.00 hrs Saturday. The quarry will not operate on Sundays or Bank Holidays, except in emergency situations.
- 5.102 The site is accessed by a private road that leads northwards forming a crossroads with the east-west LP3619-0 local public road and onwards on the L7645-0 local road to the Barryscourt interchange and the N25. The private road also serves the Rossmore Landfill and Civic Amenity Centre, which is operated by Cork County Council.
- 5.103 Extraction, processing and ultimately restoration activities at the application site require a number of environmental controls to eliminate or minimise the potential nuisance arising from the extraction and processing operations. The environmental control measures in place at the site are outlined in the relevant EIA Chapters.
- 5.104 The current water management within the quarry involves pumping a combination of rainwater and groundwater from the quarry floor to the existing settlement lagoon and groundwater infiltration area located to the southeast of the site.
- 5.105 All water (stormwater and groundwater inflows) pumped from the quarry void will continue to be discharged in compliance with the requirements of discharge licence ref no WP(W)08.18(R) and in accordance with the emission limit values specified under the discharge licence.
- 5.106 In dry, windy weather conditions, site activities may give rise to dust blows across and beyond the existing or planned development site areas.
- 5.107 The incidence of fugitive dust outside of the operation is reduced by all of the mobile crushing and screening plant being located within the quarry void. Generation of fugitive dust is generally limited to periods of very low rainfall (refer to Chapter 8 – Air Quality). Dust deposition monitoring will continue to be carried out as part of the environmental monitoring programme.
- 5.108 The potential for noise generation from within the proposed development area is reduced by locating all of the mobile crushing and screening plant within the quarry void. This means that the potential for noise generation from activities associated with the operation of the plant, such as movement of vehicles has been reduced (refer to Chapter 10 – Noise). Noise monitoring will continue be carried out as part of the environmental monitoring programme.
- 5.109 Blasting mitigation measures form part of the Environmental Management System for the quarry site. These measures relate to blasting procedures such as quantity of explosive and charge-hole spacing along rock face.



Proposed Restoration Scheme

- 5.110 Upon the cessation of extraction operations, it is proposed to return the quarry area to natural habitat after-uses as recommended by the Development Applications Unit in their scoping response – refer to Figure 2.2 in Chapter 2 of the EIAR. This is one of the beneficial after uses listed in the EPA Guidelines: 'Environmental Management in the Extractive Industry' (2006).
- 5.111 This will be achieved by the following measures:
- The application area will be left for natural recolonisation by locally occurring grass and shrub/scrub species and the void will fill with water.
 - All existing boundary fences and hedgerows will be retained to ensure that the site is secure.
 - All plant and machinery will be removed from the quarry void.
- 5.112 The restoration works will be carried out in accordance with the EPA Guidelines (2006).
- 5.113 Where feasible, restoration of exhausted and redundant areas will be carried out at the earliest opportunity. However, it is envisaged that the majority of restoration proposals will be carried out after extraction operations at the site have ceased.



ASSESSMENT OF EFFECTS

5.114 The following design principles and “*designed-in*” mitigation have informed the assessment of impacts.

- A Restoration Plan is provided in Chapter 2 of the EIAR.
- Within the scheme design and operation, good practice environmental and pollution control measures will be employed with regard to current best practice guidance such as, but not limited to the existing management measures set out in Chapters 7 (Water), 8 (Air Quality), 10 (Noise & Vibration) of this EIAR that comply with the recommended best practice set out in the DoEHLG (2004), ICF (2005) and EPA (2006) guidelines for the sector.

5.115 Taking the above into account, the principal potential impacts of the proposed deepening of the quarry are outlined in the following sections.

Do Nothing Impact

5.116 The existing permitted quarry would continue to operate for the remainder of the current permission, after which, the site would be restored in line with the conditions associated with the existing permission. The Do-Nothing Impact will result in moderate significant positive change in the ecological interest of the Site as the quarry would cease operating, and restoration take place.

Potential Impacts

5.117 The potential direct and indirect operational stage impacts to biodiversity are discussed below. In the context of Rossmore Quarry the operational stage is taken to be excavation and processing of materials within the existing quarry area. This phase will involve blasting, excavation of rock, processing of the material and removal off - site.

5.118 Potential direct and indirect effects on biodiversity may arise due to water discharge, noise, dust and vibration within the permitted quarry area.

Water Discharge

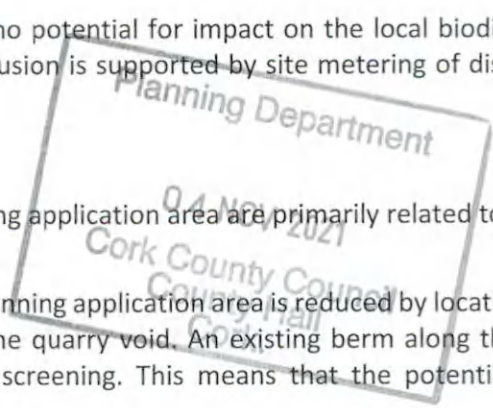
5.119 The quarry’s water management system is in place and includes a sump, , flow meter, appropriately sized and engineered lagoons and an extensive infiltration area that has been proven as fully functioning. The site’s Discharge Licence WP(W)08/18 (R) was issued in 2019 and specifies a discharge volume that remains fit for purpose, as are the lagoons and infiltration area operational at the site.

5.120 Chapter 7 Water of the EIAR concludes that no potential for impact on the local biodiversity, any Natura 2000 site or shellfish areas. This conclusion is supported by site metering of discharge and water quality monitoring reports.

Noise

5.121 The sources of noise located within the planning application area are primarily related to machinery / plant operation.

5.122 The potential for noise generation from the planning application area is reduced by locating all of the mobile crushing and screening plant within the quarry void. An existing berm along the southern boundary of the quarry provides additional screening. This means that the potential for noise



generation from activities associated with the operation has been reduced – refer to Chapter 10 Noise of the EIAR.

5.123 A noise assessment report (Chapter 10 of the EIAR) has been prepared for this project to address potential noise impacts on biodiversity. Environmental noise surveys were undertaken at various locations on the quarry boundary with the SAC/SPA and a construction noise prediction model was created.

5.124 The following definitions of levels of noise disturbance of waterbirds have been taken from Cutts *et al.* (2013).

“For noise disturbance of waterbirds to qualify as a high level, it must constitute a sudden noise event of over 60dB (at the bird, not at source) or a more prolonged noise of over 72dB” (Cutts, Hemmingway, & Spenser, 2013). Moderate noise disturbance is typified as high-level noise which has occurred over long periods so that birds become habituated to it or lower level noise which causes some disturbance to birds. This encompasses occasional noise events above 55dB, regular noise 60-72dB and long-term regular noise above 72dB, where birds have become habituated. Low level noise is classed as that which is unlikely to cause response in birds using a fronting intertidal area. As such noises of less than 55dB at the bird are included in this category. These effects are likely to be masked by background inputs in all but the least disturbed areas and thus would not disturb the birds close by. Noise between 55-72dB in some highly disturbed areas e.g. industrial or urban areas and adjacent to roads, may feature a low level of disturbance provided the noise level was regular as birds will to often habituate to a constant noise level.”

5.125 Daytime noise monitoring results from 2020 showed that average noise levels measured at the Rossmore site boundary from all quarry operations do not and will not exceed the AQTAG09 noise guidance limits for the protection of wildlife of LA_{aeq} 1HR 55dB, and that the measured noise emission levels at the SAC and SPA boundaries were LA_{aeq} 1HR 49dB and therefore there will be a negligible noise impact on the Natura 2000 sites.

5.126 In addition, Rossmore (OL548) and Weir Island (OL469) are two waterbird count subsites closest to the Rossmore Asphalt Plant (NPWS, 2014c). Walking, including dog walking, is identified as an activity that has the potential to cause disturbance to waterbirds within subsite OL469. Motorised vehicles, walking, including dog walking wildfowling and golf courses are identified as activities that have the potential to cause disturbance to waterbirds in subsite OL548. Quarrying is not identified as an activity that has the potential to cause disturbance to waterbirds in either subsite OL469 or OL548.

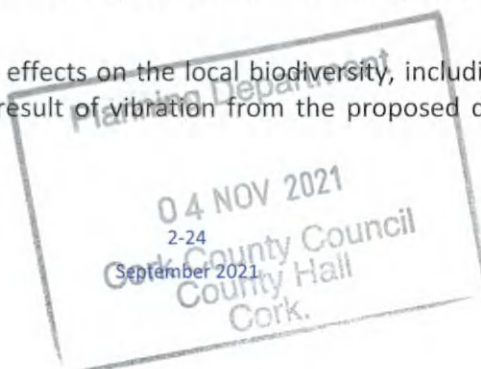
5.127 Therefore, direct and indirect effects on the local biodiversity, including Great Island Channel SAC and Cork Harbour SPA, as a result of noise from the proposed deepening operations can be excluded.

Vibration

5.128 Blasting-induced vibration is of short duration and transient in nature. The number of blasts carried out at the quarry has depended on market demand for construction materials.

5.129 On the basis of the existing blast monitoring results as presented in Chapter 10 of the EIAR, it can be shown that the ground-borne vibration levels from blasting are well below a peak component particle velocity of 12 mm/sec, and 8mm/sec if blasting more than once per week, and it is concluded that blasting operations at the proposed project area will have no significant impact on the Natura 2000 sites.

5.130 Therefore, direct and indirect effects on the local biodiversity, including Great Island Channel SAC and Cork Harbour SPA, as a result of vibration from the proposed deepening operations can be excluded.



Dust

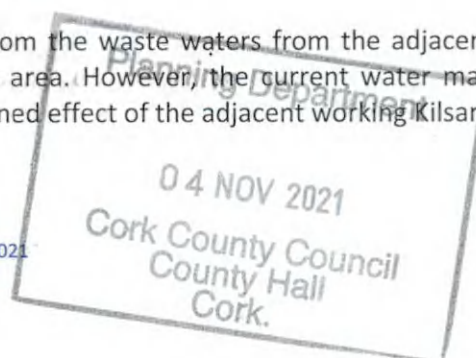
- 5.131 In dry, windy weather conditions, site activities may give rise to dust that blows across and beyond the existing or planned development site areas.
- 5.132 The incidence of fugitive dust outside of the operation is reduced by all of the mobile crushing and screening plant being located within the quarry void. Generation of fugitive dust is generally limited to periods of very low rainfall, refer to Chapter 8 Air Quality of the EIAR.
- 5.133 Baseline dust deposition monitoring at the site indicates that the levels at the application site are well below the limit for fugitive dust emissions of 350 mg/m²/day and therefore well below the level of 1000 mg/m²/day, where it is considered that dust could be likely to have a significant effect on sensitive ecosystems, refer to EIAR Chapter 8.
- 5.134 Dust deposition monitoring will continue to be carried out as part of the environmental monitoring programme (refer to conditions 13 of the existing planning permission).
- 5.135 Mitigation measures to control fugitive dust will continue to be provided in accordance with the DoEHLG (2004) guidelines for the sector and EPA (2006), refer to EIAR Chapter 8.
- 5.136 Therefore, direct and indirect effects on Great Island Channel SAC and Cork Harbour SPA as a result of dust from the proposed deepening operations can be excluded

Post – Operational Stage Impacts

- 5.137 The site will be restored to natural habitat with small areas of scrub and hedgerows along the perimeter of the site when operations cease. The proposed restoration of the site is described in detail in the Restoration Plan provided in Chapter 2 and shown on Figure 2.4 of the EIAR chapter. The restoration phase will result in a slight positive effect on the Site as the diversity of habitats present will increase resulting in increased opportunities for a wider range of flora and fauna.
- 5.138 Taking into account the ‘*designed in*’ measures, the overall effect of the operational and post - operational phases is not likely to be significant and may result in a slight positive effect.

Cumulative Effects

- 5.139 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in combination with impacts of other proposed or permitted plans and projects, can result in significant effects.
- 5.140 Other quarry developments include an expansion plan in the northern section of Rossmore quarry which will involve a landscaping scheme using existing overburden materials, an increase in the number of days during which operations outside of normal working hours can take place at the existing permitted asphalt plant; AA Screening reports were produced for both of these projects and both concluded that neither project was considered likely to result in any effects on any Natura 2000 sites and that Stage 2 appropriate assessment was not required.
- 5.141 There is potential for combined effect arising from the waste waters from the adjacent working Kilsaran quarry which discharges into the same area. However, the current water management system was designed to accommodate the combined effect of the adjacent working Kilsaran quarry,



and provision for a future potential scenario for the cessation of the adjacent Kilsaran site. In the event that the Kilsaran operation ceased, Lagan would have to dewater both quarries and this treatment capacity is built into the lagoon systems, refer to Chapter 7 (Water) of the EIA.

- 5.142 Cumulative effects from dust from the two quarries (Lagan and Kilsaran) have also been considered. The historic dust deposition monitoring results at the Rossmore Lagan site show that the average dust deposition rate is well below the limit for fugitive dust emissions of 350 mg/m²/day. In a recent EIA for the Kilsaran quarry adjacent to this project site (SLR 2021) it has also been shown that the quarry also complies with the recommended dust deposition limit value of 350 mg/m²/day (averaged over 30 days). So combined the dust levels from both quarry operations are still below the level of 1000 mg/m²/day, where it is considered that dust could be likely to have a significant effect on sensitive ecosystems.
- 5.143 There is no pathway for the proposed project to act in-combination with other plans / projects and cause significant effects. Cumulative effects are not considered likely to occur as result of the quarry proposal when considered with other plans and projects.

RESIDUAL IMPACTS

- 5.144 With the standard environmental control measures, as detailed above, in place during construction, operation and post-operation stages residual negative impacts on the receiving environment are not anticipated to be significant.

CONCLUSIONS

- 5.145 The proposed deepening of the quarry at Rossmore, Co. Cork will result in limited and localised effects on the biodiversity of the Site. The active quarry area will continue to operate under the requirements set out in the existing planning permission.
- 5.146 There will be no effect on sites designated for nature conservation (Great Island Channel SAC 001058 and Cork Harbour SPA 004030 or any shellfish areas) as a result of the proposed development. The scrub/hedgerows around the perimeter of the Site will be retained and will not be impacted.
- 5.147 Overall, the residual effects on biodiversity are not anticipated to be significant.



REFERENCES

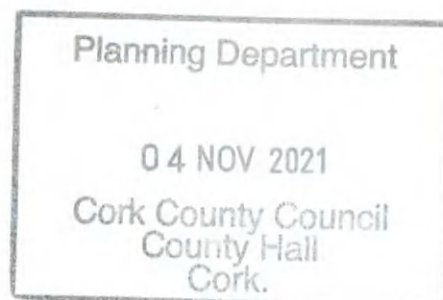
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FIGURES

Figure 5-1 Natura 2000 Sites and pNHAs within 5 km of Lagan Rossmore Quarry

Figure 5-2 Habitat Map of Lagan Rossmore Quarry





NOTES

1. Extract from Ordnance Survey Discovery Series Mapping - Map No. 80, 81 & 87
2. Ordnance Survey Ireland Licence No. CYAL50167032 (C) Ordnance Survey Ireland and Government of Ireland

LEGEND

- LANDHOLDING BOUNDARY
- APPLICATION AREA
- DISTANCE FROM SITE BOUNDARY

NATURA 2000 SITES

- GREAT ISLAND CHANNEL (SAC)
- CORK HARBOUR (SPA)
- GREAT ISLAND CHANNEL (Proposed NATURAL HERITAGE AREAS)

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 Cork County Council
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**SITE BOUNDARY &
 DESIGNATED SITES WITHIN 5KM**

FIGURE 5.1

Scale 1:30,000 @ A3 Date SEPTEMBER 2021

501.00564.00 EIAR Fig5-1 Designated Conservation Areas.dwg

501.00584.dwg PR1 EIAR Fig5-2 Habitat Map.dwg



NOTES

1. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND
2. AERIAL PHOTOGRAPHY CARRIED OUT BY SLR CONSULTING MARCH 2021

LEGEND

	APPLICATION AREA
	LANDHOLDING BOUNDARY
	GA1: IMPROVED GRASSLAND
	ED2: SPOIL AND BARE GROUND
	WS1/ED3 - SCRUB/RECOLONISING BARE GROUND
	BL3 - BUILDINGS AND ARTIFICIAL SURFACES
	ED4 - ACTIVE QUARRY AND MINES
	FL8 - OTHER ARTIFICIAL LAKES AND PONDS
	FW4 - DRAINAGE DITCH/AREA

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HABITAT PLAN
FIGURE 5.2

Scale 1:2,500 @ A3 Date SEPTEMBER 2021

APPENIDIX A: RELEVANT PLANNING POLICY AND LEGISLATION

The planning policy and legislation that is relevant to the proposal to continue and extend the quarrying operation at Rossmore is set out in the following sections.

County Planning Policies

The relevant planning policy is extracted from Volume 1, Chapter 12: Heritage of Cork County Development Plan (CDP) 2014.

Natural Heritage Objectives

The natural heritage objectives listed in Volume 1 Chapter 12 of the CDP are listed below.

HE 1-1: County Biodiversity Action Plan

Continue to implement the County Biodiversity Action Plan (2008) in partnership with all relevant stakeholders.

HE 1-2: County Heritage Plan

Continue to implement the current County Heritage Plan (2005) in partnership with relevant stakeholders and any successor to this document.

HE 2-1: Site Designated for Nature Conservation

Provide protection to all natural heritage sites designated or proposed for designation under National and European legislation and International Agreements, and to maintain or develop linkages between these. This includes Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas, Statutory Nature Reserves, Refuges for Fauna and Ramsar Sites.

HE 2-2: Protected Plant and Animal Species

Provide protection to species listed in the Flora Protection Order 1990, on Annexes of the Habitats and Birds Directives, and to animal species protected under the Wildlife Acts in accordance with relevant legal requirements. These species are listed in Volume 2, Chapter 4 of the plan.

HE 2-3: Biodiversity outside Protected Areas

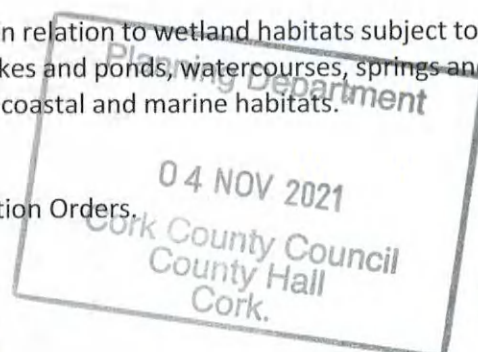
Retain areas of local biodiversity value, ecological corridors and habitats that are features of the County's ecological network, and to protect these from inappropriate development. This includes rivers, lakes, streams and ponds, peatland and other wetland habitats, woodlands, hedgerows, tree lines, veteran trees, natural and semi natural grasslands as well as coastal and marine habitats. It particularly includes habitats of special conservation significance in Cork as listed in Volume 2 Chapter 3 Nature Conservation Areas of the plan.

HE 2-4: Protection of Wetlands

Ensure that an appropriate level of assessment is completed in relation to wetland habitats subject to proposals which would involve drainage or reclamation. This includes lakes and ponds, watercourses, springs and swamps, marshes, heath, peatlands, some woodlands as well as some coastal and marine habitats.

HE 2-5: Trees and Woodlands

- a) Protect trees the subject of Tree Preservation Orders.



- b) Preserve and enhance the general level of tree cover in both town and country. Ensure that development proposals do not compromise important trees and include an appropriate level of new tree planting and where appropriate to make use of tree preservation orders to protect important trees or groups of trees which may be at risk or any tree(s) that warrants an order given its important amenity or historic value.
- c) Where appropriate, to protect mature trees/groups of mature trees and mature hedgerows that are not formally protected under Tree Preservation Orders.

HE 2-7: Control of Invasive Species

Control the spread of invasive plant and animal species within the county.

Legislation

The EIA Directive (85/337/EEC) is in force since 1985 and applies to a wide range of defined public and private projects, which are defined in Annexes I and II of the EIA Directive¹⁰. The EIA Directive of 1985 has been amended three times, in 1997, in 2003 and in 2009. The initial Directive of 1985 and its three amendments have been codified by Directive 2011/92/EU of 13 December 2011. Directive 2011/92/EU has been amended in 2014 by Directive 2014/52/EU.

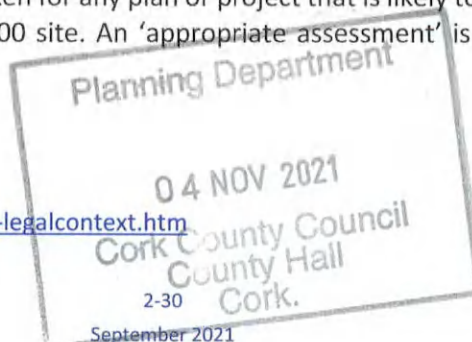
The EIA Directive was first transposed into Irish law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349 of 1989) which amended the Local Government (Planning and Development) Act, 1963 (and other legislation) to provide for environmental impact assessment. The European Union (Planning and Development)(Environmental Impact Assessment) Regulations 2018 (S.I. 296 of 2018) came into force on 1 September 2018, save for limited provisions which are due to come into effect in January 2019. The Regulations principally seek to implement the requirements of EIA Directive 2014/52/EU.

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An 'appropriate assessment' is an evaluation of the potential

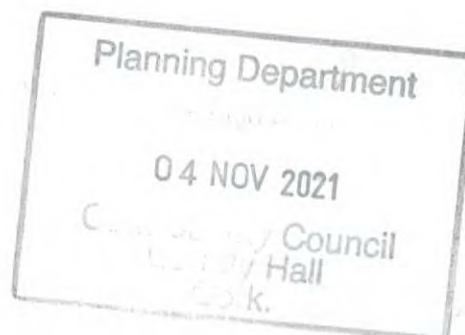
¹⁰ <http://ec.europa.eu/environment/eia/eia-legalcontext.htm>



impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2012 and the Flora (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that *'Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made'*.

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.



**APPENDIX B: RARE AND /OR PROTECTED SPECIES WITHIN
2 KM GRID SQUARES W87A AND W87F**

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Rare and / or protected flora & fauna within the 2 km grid squares W87A and W87F

Species record	Grid reference	Date of Last record	Protected Status	Source / Dataset
Bar-tailed Godwit (<i>Limosa lapponica</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex I. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Black-headed Gull (<i>Larus ridibundus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Red Listed	Bird Atlas 2007 - 2011
	W87F			
Black-tailed Godwit (<i>Limosa limosa</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Common Greenshank (<i>Tringa nebularia</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Common Kestrel (<i>Falco tinnunculus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Common Linnet (<i>Carduelis cannabina</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Common Redshank (<i>Tringa totanus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Red Listed	Bird Atlas 2007 - 2011
	W87F			
Common Shelduck (<i>Tadorna tadorna</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Common Snipe (<i>Gallinago gallinago</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Common Starling (<i>Sturnus vulgaris</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Dunlin (<i>Calidris alpina</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex I. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Eurasian Badger (<i>Meles meles</i>)	W87A	16/06/2011	Wildlife Acts	Road Kill Survey
Eurasian Curlew (<i>Numenius arquata</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II. BoCCI Red Listed	Bird Atlas 2007 - 2011
	W87F			

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Species record	Grid reference	Date of Last record	Protected Status	Source / Dataset
Eurasian Oystercatcher (<i>Haematopus ostralegus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Eurasian Red Squirrel (<i>Sciurus vulgaris</i>)	W87A	06/05/2015	Wildlife Acts	Atlas of Mammals in Ireland 2010-2015
Eurasian Teal (<i>Anas crecca</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Eurasian Wigeon (<i>Anas penelope</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
European Golden Plover (<i>Pluvialis apricaria</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Red Listed	Birds of Ireland
	W87F			Bird Atlas 2007 - 2011
Gatekeeper (<i>Pyronia tithonus</i>)	W87A	13/08/2012	Threatened Species: Near threatened	Butterflies of Ireland
Great Black-backed Gull (<i>Larus marinus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Great Cormorant (<i>Phalacrocorax carbo</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Great Crested Grebe (<i>Podiceps cristatus</i>)	W87F	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Grey Plover (<i>Pluvialis squatarola</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Birds of Ireland
	W87F			Bird Atlas 2007 - 2011
Herring Gull (<i>Larus argentatus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Red Listed	Birds of Ireland
	W87F			Bird Atlas 2007 - 2011
Large Red Tailed Bumble Bee (<i>Melanobombus lapidarius</i>)	W87F	29/08/2015	Threatened Species: Near threatened	Bees of Ireland
Leach's Storm-petrel (<i>Oceanodroma leucorhoa</i>)	W87F	31/12/2011	Wildlife Acts. Habitats Directive: Annex I. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Lesser Black-backed Gull (<i>Larus fuscus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Birds of Ireland

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Species record	Grid reference	Date of Last record	Protected Status	Source / Dataset
	W87F			Bird Atlas 2007 - 2011
Lesser Noctule (<i>Nyctalus leisleri</i>)	W87A	12/07/2003	Wildlife Acts. Habitats Directive: Annex IV.	National Bat Database of Ireland
Little Grebe (<i>Tachybaptus ruficollis</i>)	W87F	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Mediterranean Gull (<i>Larus melanocephalus</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex I. BoCCI Amber Listed	Birds of Ireland
	W87F			Bird Atlas 2007 - 2011
Mew Gull (<i>Larus canus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Mute Swan (<i>Cygnus olor</i>)	W87F	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Northern Lapwing (<i>Vanellus vanellus</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II. BoCCI Red Listed	Bird Atlas 2007 - 2011
	W87F			
Northern Pintail (<i>Anas acuta</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Red Listed	Bird Atlas 2007 - 2011
	W87F			
Northern Shoveler (<i>Anas clypeata</i>)	W87A	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Red Listed	Bird Atlas 2007 - 2011
	W87F			
Red Knot (<i>Calidris canutus</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Red Listed	Birds of Ireland
	W87F			Bird Atlas 2007 - 2011
Ringed Plover (<i>Charadrius hiaticula</i>)	W87F	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Sand Martin (<i>Riparia riparia</i>)	W87A	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
	W87F			
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	W87A	12/07/2003	Wildlife Acts. Habitats Directive: Annex IV.	National Bat Database of Ireland
Stock Pigeon (<i>Columba oenas</i>)	W87F	31/12/2011	Wildlife Acts. BoCCI Amber Listed	Bird Atlas 2007 - 2011
Tufted Duck (<i>Aythya fuligula</i>)	W87F	31/12/2011	Wildlife Acts. Habitats Directive: Annex II, Annex III. BoCCI Amber Listed	Bird Atlas 2007 - 2011
West European Hedgehog (<i>Erinaceus europaeus</i>)	W87A	16/09/2012	Wildlife Acts	Road Kill Survey

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