Castlepollard Quarry, Deerpark, Castlepollard, Co. Westmeath

Castlepollard Quarry

Environmental Impact Assessment Report

Section 2

Reasonable Alternatives

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TABLE OF CONTENTS

LIST OF FIGURES

2 REASONABLE ALTERNATIVES

This section of the Environmental Impact Assessment Report (EIAR) describes the reasonable alternatives considered with respect to the proposed development at the quarry at Deerpark, Castlepollard, Co. Westmeath, during preparation of the EIAR. The development will consist of the continued use and operation of the existing quarry, including deepening of the quarry (permitted under P.A. Ref. 01/525), along with minor amendments to the permitted quarry layout comprising an extraction area of c. 4 ha within an overall application area of c. 11.4 ha. The development will include provision of new site infrastructure, including water management system, wheelwash and other ancillaries (Refer to EIAR Figure 3.1).

2.1 ALTERNATIVES EXAMINED

Schedule No. 6 of the Planning and Development Regulation 2001, as amended (reflecting Annex IV of Directive 97/11/EC) specifies the information to be contained in an EIAR, and requires *"a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects" (DoHLGH 2021)*.

One of the key changes between the EIA Directive 2011/92/EU and the revised Directive 2014/52/EU pertains to the "mandatory assessment of alternatives." The EIA Directive 2014/52/EU requires an EIAR to contain "A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects."

The new EIA Directive 2014/52/EU came into effect in 2014, and was finally transposed and adopted into Irish law on September 1st 2018. The new European Union (Planning and Development)(Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) are now in effect and should remain in force during the expected life of the proposed development. The EPA has prepared several guidance documents in the interim before transposition that incorporated the expected provisions of the new law (EPA 2015; 2017). The Guidelines have been drafted with the primary objective of improving the quality of EIARs with a view to facilitating compliance (with the Directive). Practitioners are expected to adhere to the guidance while preparing EIARs, for applications made on or after May 16th 2017. As new guidelines superseding the draft guidelines have not yet been published by the EPA, due consideration of the draft guidelines was taken with respect to the preparation of the EIAR.

On the basis of the Draft Advice Notes on Current Practice for preparing Environmental Impact Statements (EPA 2015), and Draft Guidelines on the Information to be contained in an Environmental Impact Assessment Report (EPA 2017), which take account of the revised EIA Directive (2014/52/EU), alternatives to the current proposals have been considered at eight principal levels.

2.1.1 'DO-NOTHING' ALTERNATIVE

The existing site comprises a small-sized limestone quarry, which is being worked using mobile crushing and screening plant and machinery. The 'Do Nothing' alternative means all quarrying activities would cease. The site would be restored as per the requirements of the existing planning permission (P.A. Ref. 01/525, PL 25.128072), such that the lands would be returned to beneficial after-use. However, the resources of the quarry would remain in situ and thus unutilised at a time when the economy and construction industry are growing and demand for aggregates is increasing.

2.1.2 ALTERNATIVE SOURCES OF AGGREGATES

In general, aggregates used in construction are won from quarries and sand & gravel pits. There are no reasonable alternatives in the near term to the current terrestrial sources of aggregates.

Secondary aggregates cannot be relied upon as a real alternative to primary aggregates. In general, secondary aggregates derived from Construction and Demolition (C&D) are required to meet End of Waste (EoW) criteria in respect of waste materials.

At EU level, the Waste Framework Directive (2008/98/EC) ('the WFD') has previously set the legal framework for waste management in the European Union. The WFD sets the basic concepts and definitions related to waste management, such as definitions of waste, recycling, and recovery. It explains when waste ceases to be waste and becomes a secondary raw material (so called end-of-waste EoW criteria), and how to distinguish between waste and by-products. The WFD lays down some basic waste management principles—it requires that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest.

Article 28 of the European Communities (Waste Directive) Regulations, 2011, transposes article 6 of the 2008 Waste Framework Directive (2008/98/EC). Article 28 sets out the grounds by which a material which is recovered or recycled from waste can be deemed to be no longer a waste (i.e., EoW).

In the absence of end-of-waste criteria set at Community, and/or National Level, article 28(3)(a) of the Regulations allows the EPA to decide on a case-by-case basis whether certain waste has ceased to be waste. The making of an end-of-waste proposal to the EPA is a complex process and to date only two decisions have been issued by the EPA with respect to EoW for recycled C&D waste.

Furthermore, the volume of C&D waste suitable for recycling as secondary aggregates for use in construction is very low relative to the overall demand for aggregates (i.e., estimates of c. 5%).

In the long term, the extraction of sand and gravel from marine sources may be implemented as terrestrial sources become depleted or increasingly in conflict in terms of land use and amenity and environmental protection. Today, marine aggregates are dredged from the seabed in the UK and elsewhere around the globe and are used largely in the production of concrete. Currently, no marine aggregate is being exploited in Ireland, although the extraction

of marine aggregate from the Irish Sea has been studied (Sutton et al. 2008). The ICF (2017) stated that "It is imperative, that in order to prepare for this likely shortage of reserves, the National Planning Framework commits to investigating further the potential of Ireland's marine aggregates resources and establishing the required regulatory provisions to permit commercial extraction of marine aggregates to address any future shortage in land based aggregates."

In the absence of significant volumes of aggregates from marine and recycled/ secondary sources, terrestrial deposits, such as the limestone at Castlepollard Quarry, will continue in the near term to be the main source of construction aggregates in Ireland.

2.1.3 ALTERNATIVE LOCATIONS

In considering alternative locations it is a basic principle that minerals can only be worked where they naturally occur. – they are a "tied resource". The products are generally of low unit value. The most significant cost is transportation and as a result most quarries typically operate within a radius of c. 25-30 km of their market. The site has the benefit of being strategically located on the R395 regional road and within c. 2 km south of Castlepollard, c. 4.75 km northwest of Collinstown, c. 8.5 km southeast of Multyfarnham, c. 13.5 km northwest of Delvin, c. 13.5 km southwest of Oldcastle, c. 15.5 km southwest of Mullingar, c. 17 km west of Clonmellon, c. 17 km southeast of Granard, c. 20.5 km east of Edgeworthstown, c. 21 km north of Killucan, c. 22.5 km south of Kilnaleck, c. 23 km southwest of Ballyjamesduff, c. 23.5 km southwest of Virginia, and c. 24 km northwest of Athboy (Refer Figure 2.1).

This market covers the region of north and central County Westmeath and bordering areas of counties Longford, Cavan and Meath. There is one county town within the 25 km natural market of the Castlepollard Quarry, namely Mullingar, which is designated a Key Town, as defined in the Regional Spatial and Economic Strategy (RSES) for the Eastern & Midland Regional Assembly (EMRA) 2019–2031 (EMRA 2019). Furthermore, there are also 14 census towns within the market, where development is focused under the new NDP, as well as numerous smaller towns and villages. With fuel prices forecasted to follow an overall upward trajectory, the practical limit for transport of aggregates will continue to contract the natural catchment area of individual quarries.

In addition, where it is practical, it is generally considered preferable to allow continuance of use and extensions to existing mineral workings in contrast to opening new quarries at 'greenfield' sites. The continued use and operation of the existing quarry along with the deepening of the quarry also has the benefit of lower development costs as there is already an available working quarry face, existing infrastructure in place to operate the quarry.

In a previous case pertaining to the Greenport Waste Facility, Limerick, An Bord Pleanála decided that there is no requirement that if a more advantageous site is identified that it would exclude other sites as being unacceptable, and that the suitability of a site can be the primary element in the assessment of an application (ABP 2010). However, a fundamental and important consideration in this instance is that there is a site with proven reserves of good quality rock. The current landholding has an established history of quarry working and is in the control of the applicant.

2.1.4 SIZE AND SCALE

The Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment state that information on reasonable alternatives, which may include size and scale, should be considered (DoHPLG 2018).

The size of the development is dictated by the physical dimensions of the resource that: (1) lies within the landholding under the control of the operator; (2) is accessible; (3) economically extractable; and (4) ultimately permitted by the planning authority. The extraction area and hence proposed permitted area could potentially be extended to the western, southern and eastern boundaries of the landholding, but this would result in the unacceptable loss of the wooded copse that cover these three flanks of the hill, and which maintain the visual amenity by screening the development, as well as providing an ecological habitat. Extension to the east would conflict with the road network, nearby residences, agricultural land and open up views from the east.

The scale of the development refers to the scale or rate of production and is dictated by many considerations, including the volume of the resource, capital costs, and cost efficiencies. Other considerations include dimensions of the site, market demand, maximum permitted production, carrying capacity of the road network, and limitations placed on the operation in terms of mitigations implemented to reduce noise, dust, visual amenity and other environmental impacts. The scale of the operation under planning permission P.A. Ref. 01/525, PL 25.128072 was approximately 100,000 tonnes per annum. An average extraction capacity of 100,000 tonnes is anticipated as part of the proposed development.

2.1.5 ALTERNATIVE SITE LAYOUT

The layout largely relates to the logical placement of infrastructure and plant associated with the elements of the process within the area of the site. It is mainly dictated by the commercial imperatives of process efficiency, operational efficiency and cost-efficiency, as well as environmental effects such as noise, dust, and visual impact.

The layout of the facility is driven by the need to streamline the basic processes of extraction, crushing and screening of rock for the production of aggregate materials, as well as the need to minimise any adverse impact and optimise the quarry for a restoration scheme to beneficial after-use. As a result of the historical and current direction and phasing of working, the visual impact of the quarry is minimal, and as such this will remain the case with the proposed development layout. Also, the layout and siting of areas for placement of mobile plant, stockpiling product, and proposed settlement pond system have been sited within the existing quarry area to reduce environmental impact with respect to groundwater, visual impact, noise and dust.

As such, the layout in the quarry has developed over the years and is largely established. Thus, as this is an established quarry with existing infrastructure and stockpiles currently in situ, the layout is largely predetermined. Installation of a new water management system, including settlement ponds and hydrocarbon interceptor, if extending the quarry to depth below the water table is permitted, will afford the opportunity to optimise the site layout, which will be accommodated within the existing quarry footprint. There is no proposal to reinstate the asphalt plant at the quarry.

2.1.6 ALTERNATIVE DESIGNS

Design more closely relates to the visual aesthetics of the development, which is less of a consideration in quarries as compared to enduring and visual imposing residential, retail and commercial developments, public buildings or major pieces of infrastructure. Nonetheless, as negative visual impact can be a major environmental aspect associated with such developments, optimising the design alternatives is considered a priority.

Visual impacts can be resolved through a number of design solutions by varying key aspects such as the location, shape, size, orientation, colour, etc. of the facilities. In this case, the main site activity, including processing plant, is sited on the existing quarry floor and as such benefits from screening afforded by the existing quarry faces, perimeter landscaping and intervening vegetation, including copses of mature trees and mature hedgerows. As this is an established quarry, design alternatives are very limited at this point in the life cycle of the development. The current practice of using mobile crushing and screening equipment on the quarry floor deep inside the horseshoe-shaped extraction area, as opposed to the more exposed former processing area, mitigates the associated visual and noise impacts.

As a natural consequence of the planning process, alternative schemes in terms of the working phases, face heights, direction of working and site restoration, etc. have been considered. The final scheme adopted has been determined by a process of examination and elimination to be most appropriate for the site. The detail with respect to the quarry design is described under Section 3.2.2.2, titled "*Description of Design*".

2.1.7 ALTERNATIVE PROCESSES

As this is an established quarry with infrastructure in place, no alternative working method was considered. Conventional drilling and blasting methods are used in the breaking of quarry rock faces. Extracted rock is loaded by excavator or front-end loader to a mobile crushing and screening plant at the quarry face. The crushing and screening operation comprises primary, secondary and tertiary stages to produce the range of sizes required. The aggregates produced are then stockpiled and subsequently loaded out by a front-end loader to road trucks for transport off site. A significant advantage of using mobile crushing and screening equipment is that the plant can be located close to the working face thereby reducing the impact of the plant with respect to dust, noise and visual intrusion.

Processing generally occurs on the floor of the quarry using mobile crushing and screening equipment to produce saleable aggregates. There are no viable alternatives to this widely used and now conventional method of quarrying.

While the process is largely determined by the principle of best available technology (BAT), process options can include such aspects as management of the process that affect the volumes and characteristics of emissions, residues, traffic and the use of natural resources. The precise working method and phasing to be implemented was determined following a detailed examination of various environmental issues.

2.1.8 ALTERNATIVE MITIGATION MEASURES

The central purpose of an EIA is to identify potentially significant adverse impacts at the pre-consent stage and to propose measures to mitigate or ameliorate such impacts. There are three established strategies for impact mitigation - avoidance, reduction and remedy, and thus it may be possible to mitigate effects in a number of different ways. The EIAR describes the various options and provide an indication of the main reasons for selecting the chosen options, including a comparison of the environmental effects.

2.1.9 CONSULTATION ABOUT CONSIDERATION OF ALTERNATIVES

The EIAR has been prepared by specialist Mineral Planning and Environmental consultants with over 30 years' experience in preparing EIAR for quarry developments. Consultation has also taken place with sub-consultants appointed to prepare studies on specialised subjects. These include hydrogeologists, geologists, ecologists, traffic and archaeological consultants (Refer to Section1.9). The proposed development relates to continued use and operation of the existing quarry (permitted under P.A. Ref. 01/525) and such the impacts of the proposed development and concerns of local residents and landowners are well understood and have been considered in the EIAR.

It is acknowledged that there is need for quarries in the area to meet local and regional demand. There is a potential shortfall in the supply of aggregate given the growing population of, and demand for housing in, County Westmeath, particularly around Mullingar (Refer to Appendix 1.1: Need for Development).

The site has the benefit of being strategically located on the R395 regional road and within c. 2 km south of Castlepollard, c. 4.75 km northwest of Collinstown, c. 8.5 km southeast of Multyfarnham, c. 13.5 km northwest of Delvin, c. 13.5 km southwest of Oldcastle, c. 15.5 km southwest of Mullingar, c. 17 km west of Clonmellon, c. 17 km southeast of Granard, c. 20.5 km east of Edgeworthstown, c. 21 km north of Killucan, c. 22.5 km south of Kilnaleck, c. 23 km southwest of Ballyjamesduff, c. 23.5 km southwest of Virginia, and c. 24 km northwest of Athboy (Refer to Figure 2.1).

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By their nature aggregate resources can only be worked where they occur. The products are generally of low unit value, with the most significant cost being transportation. Therefore, most quarries typically operate within a c. 25-30 km radius of their market. The quarry lies in an area delineated by the M3 and M4 to the northeast and southwest, respectively, and the N52 and N55 to the southeast and northwest, respectively. Most of the major towns within 25 kms, with the exception of Ballyjamesduff, lie on these national routes and largely define the

practical limit of the market. These are readily accessible by the radial web of regional roads emanating from Castlepollard and National N52 and N51 at Delvin.

Thus, the proposed development has the benefit of good access to the regional and national road network to meet future demands for aggregate in the area. It will ensure the continued viability of aggregate supply in County Westmeath.

In addition, where it is practical, it is generally considered preferable to allow continuance of use and extensions to existing mineral workings in contrast to opening new quarries at 'greenfield' sites. It is expected that production of construction aggregates will grow significantly as Ireland emerges from the shutdown due to the Coronavirus Pandemic and returns to full economic growth.

2.2 REFERENCES

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2.3 FIGURES

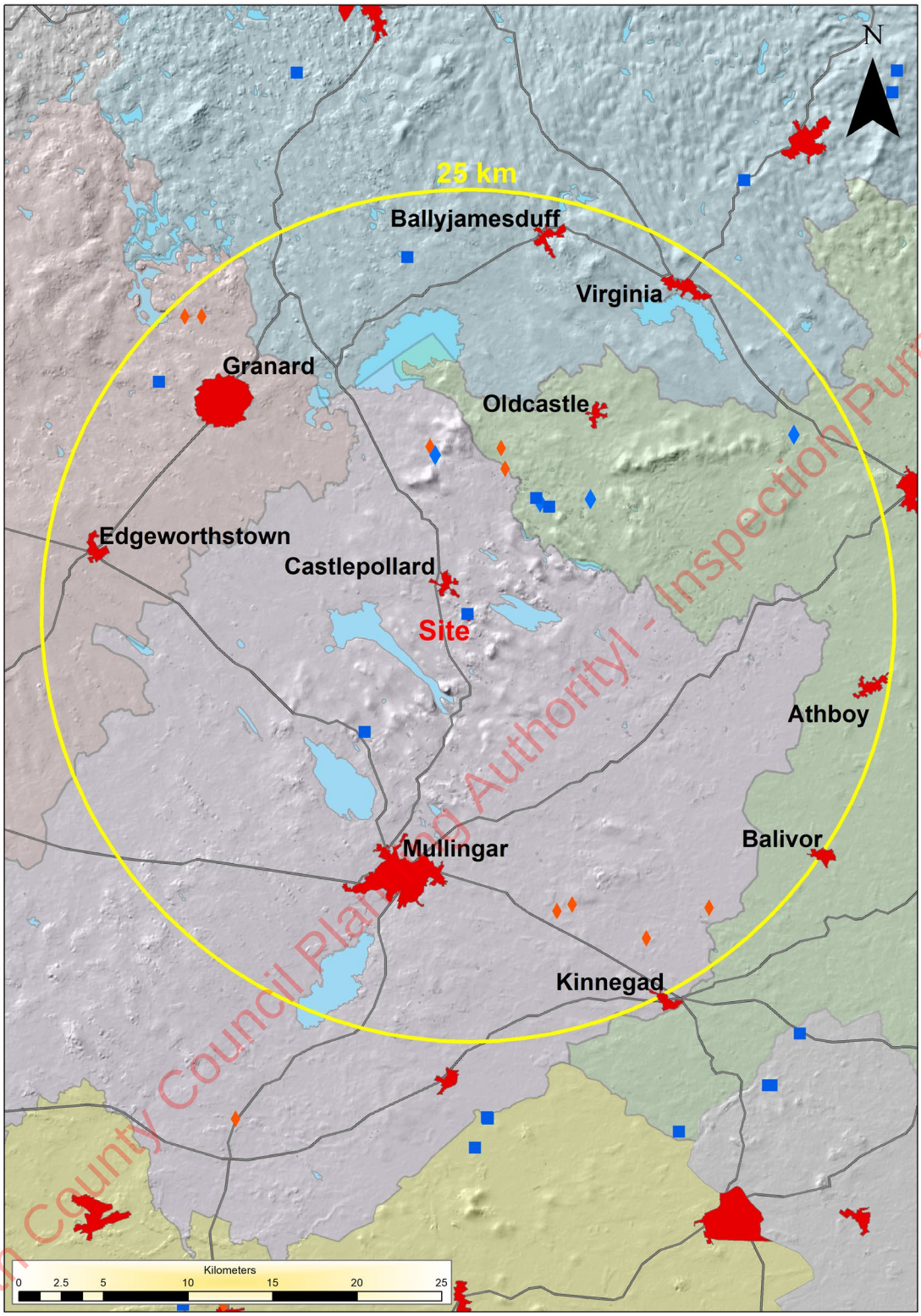

Figure 2.1 Map of Wider Region around Castlepollard Quarry

Hill-shaded relief map of Castlepollard Quarry and surrounding region showing 25 km radius market around quarry. Location of active quarries in 2014 (■), sand and gravel pits (♦), and active sand and gravel pits in 2021 (♦). Major towns and national road network and parts of regional network are also shown. Rendered in ArcGIS 10.3.1 using hill-shaded relief map derived from EU-DEM data as a basemap with data from the GSI.