

# Spink Quarry, Knockbaun, Abbeyleix, Co. Laois

## Spink Quarry

### Environmental Impact Assessment Report

#### Section 2

#### Reasonable Alternatives

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Laois County Council Planning Authority, Viewing Purposes Only

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## 2 REASONABLE ALTERNATIVES

### 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"* (DoHGLGH 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 1<sup>st</sup>, 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 16<sup>th</sup>, 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 the following principal levels.

### 2.1.1 'DO-NOTHING' ALTERNATIVE

The existing site permitted under P.A. Ref. 10/383 comprises a moderate-sized hardrock quarry, which has been extensively worked with some remaining infrastructure and stockpiles on the quarry floor. The 'Do Nothing' alternative means all quarrying and ancillary activities would cease. The site would be restored as per the requirements of the existing planning permission (P.A. Ref. 10/383). Furthermore, 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 aggregate and concrete products is increasing.

### 2.1.2 ALTERNATIVE SOURCES OF AGGREGATES

In general, aggregates used in construction are won from hardrock quarries and sand and 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 sandstone/shale at Spink Quarry, will continue in the near term to be the main source of construction aggregates in Ireland.

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### 2.1.3 ALTERNATIVE LOCATIONS

In considering alternative locations it is a basic principle that minerals can only be worked where they naturally occur. 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 c. 4 km northwest of Swan, c. 7 km south of Timahoe, c. 10 km east of Abbeyleix, c. 10 km north of Castlecomer, c. 14 km southwest of Stradbally, c. 16 km south of Portlaoise, and c. 20 km northwest of Carlow Town, c. 20 km east of Mountrath, c. 25 km south of Mountmellick, and 25 km north of the northern outskirts of Kilkenny City (Refer Figure 2.1). In this regard, it is notable that County Laois had the second highest population growth rate in Ireland in the 2002-2016 period. The quarry is located on the northwestern flank of the Castlecomer Plateau, interposed between the two arterial road corridors of the N77 (Portlaoise-Abbeyleix-Kilkenny National Secondary Road) and N78 (Ballitore-Athy-Kilkenny National Secondary Road), and further afield the M8 (Dublin to Cork National Primary Road) c. 7.5 km west of Abbeyleix and the M9 (Dublin to Waterford National Primary Road) c. 23 km to the east near Carlow Town. 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 applications for 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 permitted 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 terms of quarry access roads, wheelwash, weighbridge, settlement ponds, screening berms, etc.

In a previous case pertaining to the Greenport Waste Facility, Limerick, An Bord Pleanála have decided that there is no requirement that if a more environmentally 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 ownership 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 planning application area could potentially be extended to the south of the landholding, but this would result in the loss of the coniferous plantation that cover the hill into which the quarry is developed. Extension to the east, west and north would conflict with the road network, nearby residences, agricultural land and potentially open up views. Furthermore, these lands are not within the ownership of the applicant.

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. 10/383 was up to a maximum output of 350,000 tonnes per annum. The proposed development will not exceed this level and the average output will be closer to c. 200,000 tonnes per annum.

#### 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 considerations 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 and value-added products, such as ready-mix, as well as the need to minimise any adverse impact, particularly visual impact, and optimise the quarry for a restoration scheme to beneficial after-use. The direction and phasing of working has been designed to minimise visual impact, and as such has also dictated the preferred layout. Also, the layout and siting of areas for placement of infrastructure and plant, stockpiling product, and 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, settlement pond system, and stockpiles currently in situ, the layout is largely predetermined.

### 2.1.6 ALTERNATIVE DESIGNS

Design more closely relates to the visual aesthetics of the development, which is less of a consideration in impermanent and screened 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 and concrete batching facility, will be sited on the existing quarry floor and as such benefits from screening afforded by the existing quarry faces and intervening vegetation, including mature hedgerows, perimeter landscaping and screening berms. Mature planting on peripheral screen embankments and berms provide some attenuation of the visual impact, although this probably needs to be reinforced with supplemental planting. As this is an established quarry with fixed infrastructure in place, design alternatives are very limited at this point in the life cycle of the development.

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 will be loaded by excavator or front-end loader to a mobile crushing and screening plant at the quarry face. The crushing and screening operation will comprise primary, secondary and tertiary stages to produce the range of sizes required. The aggregates produced will then be stockpiled and subsequently loaded out by a front-end loader to road trucks for transport off site and/or use in the concrete batching plant. 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 crushing and screening equipment to produce saleable aggregates. There are no viable alternatives to this widely used and 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.

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### 2.1.9 CONSULTATION ABOUT CONSIDERATION OF ALTERNATIVES

Following pre-consultation with Laois County Council (Refer to EIAR Section 1.5) it is acknowledged that there is a need for quarries in the area to meet local and regional demand. There is a potential shortfall in the supply of aggregate given the fast-growing population of, and demand for housing in, County Laois (Refer to Appendix 1.1: Need for Development).

The site has the benefit of being strategically located c. 4 km northwest of Swan, c. 7 km south of Timahoe, c. 10 km east of Abbeyleix, c. 10 km north of Castlecomer, c. 14 km southwest of Stradbally, c. 16 km south of Portlaoise, and c. 20 km northwest of Graiguecullen/Carlow Town. The quarry is located on the northwestern flank of the Castlecomer Plateau, interposed between the two arterial road corridors of the N77 (Portlaoise-Abbeyleix-Durrow-Kilkenny National Secondary Road) and N78 (Ballitore-Athy-Kilkenny National Secondary Road), and further afield the M8 (Dublin to Cork National Primary Road) c. 8 km west of Abbeyleix and the M9 (Dublin to Waterford National Primary Road) c. 23 km to the east near Carlow Town. With fuel prices forecasted to follow an overall upward trajectory, the practical limit for transport of stone and aggregate will continue to contract the natural catchment area of individual quarries.

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 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 Laois.

The site will benefit from economy of scale in terms of being a medium scale quarry when developed with a full complement of site infrastructure and plant and machinery, as opposed to the alternative of developing a proliferation of smaller quarries in greenfield sites to meet demand. 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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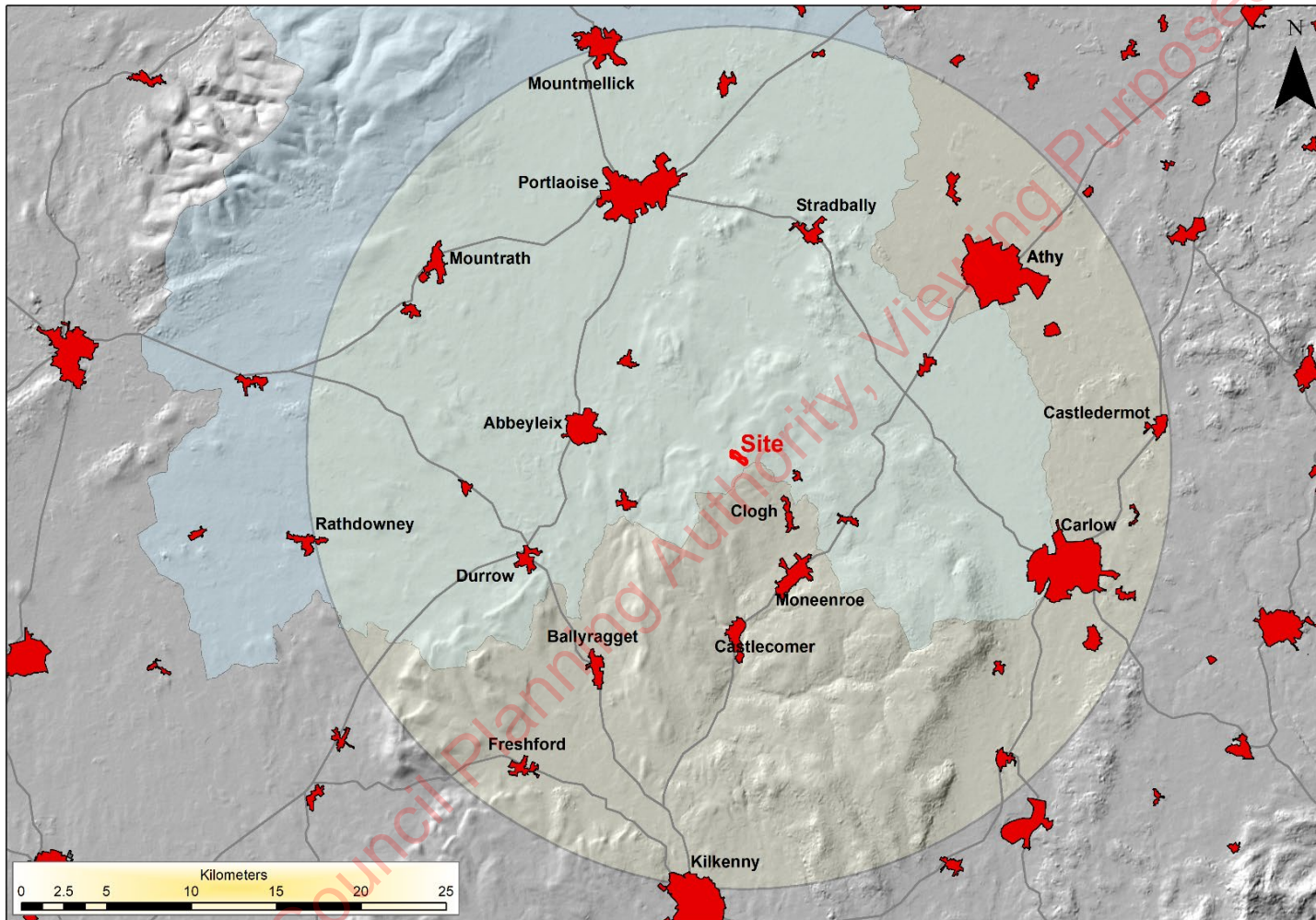
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2.3 FIGURES

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**Figure 2.1 Map of Region showing Urban Centres (Labelled) within the Natural Market of the Spink Quarry (i.e., 25 km).**

Note the occurrence of Portlaoise, Carlow and Kilkenny within the market. County Laois coloured in light blue; 25 km radius area circled in beige. Rendered in ArcGIS 10.3 using data from the CSO (2019) overlain on hillshaded relief map derived from EUDEM data.