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Introduction

Background

- 3.1 This chapter of the Environmental Impact Assessment Report (EIAR) considers the topic of Alternatives in relation to the extension of the existing sand & gravel pit at Kilmore, Brinny co. Cork.
- 3.2 For the purposes of this EIAR, the area within the red line boundary on EIAR Figure 1-2 is referred to as 'the application area' and the wider landholding (within the blue line boundary as per EIAR Figure 1-2), is referred to as 'the overall site'.
- 3.3 Further detail on the proposed development and the application site context is provided in Chapter 2 of this EIAR.

Scope of Work / EIA Scoping

- 3.4 In relation to consideration of alternatives the DoHPLG (2018) Guidelines for Planning authorities and An Bord Pleanála on carrying out Environmental Impact Assessment state:

"4.12 The Directive requires that information provided by the developer in an EIAR shall include a description of the reasonable alternatives studied by the developer. These are reasonable alternatives which are relevant to the project and its specific characteristics. The developer must include the main reasons for the option chosen taking into account the effects of the project on the environment.

4.13 Reasonable alternatives may relate to matters such as project design, technology, location, size and scale. The type of alternatives will depend on the nature of the project proposed and the characteristics of the receiving environment. For example, some projects may be site specific so consideration of alternatives may not be relevant."

Contributors / Author(s)

- 3.5 This chapter of the EIAR was prepared by Tim Paul (MSc, MRICS, CEng, MIQ), Chartered Minerals Surveyor and Chartered Engineer, SLR Consulting Ireland. Tim works as a planning and environmental advisor on minerals planning / EIA and development in Ireland and internationally. Over the past 20 years he has been responsible for the scoping, preparation and submission of numerous EIA's / EIAR's for sand & gravel pits and quarry developments. Tim was a lead author of the Environmental Management Guidelines for Extractive Industry (EPA, 2006).

Difficulties Encountered

- 3.6 No limitation or difficulties were encountered in the preparation of this chapter of the EIAR.

Lands At Kilmore, Brinny

- 3.7 The existing sand & gravel pit is located in an area favourable to extraction activities, due to, *inter alia*:
- Established history of sand & gravel extraction, processing, and value-added concrete manufacturing landuse at this location;
 - Proven sand & gravel reserves, noting that these developments are resource tied (i.e. can only be worked where the resource / reserves are present) – refer to EIAR Chapter 6;
 - Located with access to the regional and national roads network – refer to EIAR Chapter 14;
 - Best practice industry standard extraction and processing methods are used;
 - Low development costs because infrastructure already in place at the site.

Need For The Development

Project Ireland 2040

- 3.8 Project Ireland 2040 was published in February 2018 and is the overarching policy and planning framework for the social, economic and cultural development of the country for the next 20 years and further. It includes the National Development Plan: a ten-year strategy for public capital investment to 2027 and the 20-year National Planning Framework.
- 3.9 The National Planning Framework 2018 is the high-level strategic plan for influencing future growth and development up to the year 2040. The framework is intended to guide public and private investment, to protect and enhance the environment and create and promote opportunities.
- 3.10 The National Planning Framework 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. The planning process will play a key role in realising the potential of the extractive industries sector by identifying and protecting important reserves of aggregates and minerals from development that might prejudice their utilisation. 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”.*
- 3.11 The extractive industries are considered not just important as a source of supply to a variety of sectors both domestic and for export, aggregates are an essential requirement for Irelands future. Project 2040 will not happen without a secure supply of aggregates.
- 3.12 The recovery in output in the Irish construction industry since 2013 has led to increased demand for construction aggregates and it is anticipated that demand will increase further in coming years following the pressure to increase residential

housing output and the planned spend of almost €116 billion between the State and State-owned commercial companies under the National Development Plan and Project Ireland 2040 in the ten years from 2018 to 2027.

- 3.13 It is estimated that each new residential house typically requires 300-400 tonnes of aggregate. Every new school typically requires some 3,000 tonnes of aggregates and every 1km of roadway requires up to 30,000 tonnes of aggregates. On average each person within the EU consumes 6 tonnes of aggregate per year, however the current demand for aggregates in Ireland is twice that figure, at 12 tonnes per capita per year.

Essential Aggregates: Providing for Ireland's needs to 2040

- 3.14 It is estimated that Ireland will need to produce an estimated 1.5 billion tonnes of aggregates to meet housing and infrastructure targets set down under the Government's Project Ireland 2040 plan, according to the Irish Concrete Federation (ICF) in a major publication issued by them in October 2019.

- 3.15 "Essential Aggregates: Providing for Ireland's needs to 2040" is an industry led call for Government to ensure that Ireland's future supply of aggregates (crushed rock, sand and gravel) is planned, monitored and managed in a sustainable manner, to provide for Ireland's future infrastructure development.

"These aggregates are the essential raw materials from which Ireland's future infrastructure will be built, including our homes, offices, schools, hospitals and transport network. Aggregates can only be accessed where they occur. Currently there are approximately 500 large commercial quarries extracting aggregates throughout Ireland. The supply of local aggregates is essential to the sustainable development of Irish communities. Local supplies of raw materials reduce transport distances, thereby reducing their carbon footprint compared to non-local sources. Current demand for aggregates in Ireland at 12 tonnes per capita is twice the average demand in the EU 28. Project Ireland 2040 will necessitate the production of approximately 1.5 billion tonnes of aggregates."

- 3.16 As noted above the ICF identifies that demand for aggregates in Ireland at 12 tonnes per capita is twice the current EU 28 average, due to Ireland's infrastructural deficit, dispersed pattern of settlement and resulting large road network. The report also highlights that:

"Ireland has abundant natural reserves of high-quality aggregates, but their future accessibility must be planned for and protected by Government. A lack of future planning and priority in the planning process and delays in achieving prospective quarry planning permissions will result in future shortages in the supply of some types of construction aggregates in certain areas of the country. The future supply of aggregates needs to be prioritised and addressed in a planned manner if we are to reach the ambitious construction targets as laid out in Project Ireland 2040".

Demand for Aggregates / Replenishment Requirements

- 3.17 Supply and demand data for individual quarries is not publicly available as it is commercially sensitive information.
- 3.18 However, recent independent analysis carried out for and published by the Irish Concrete Federation (ICF) – "Essential Aggregates: An Evidence-Based Assessment to Inform Ireland's Planning Policy" May 2025, includes an assessment of the current

replenishment rates of authorised aggregate reserves in Ireland. Its key findings include:

'Over the past eight years (2017-2024) the 'replenishment' of aggregate reserves has been running behind annual consumption. On average, only 61% of the annual consumption has been replenished by means of new planning authorisations'.

'At current levels of land area authorisation, the replenishment rate of authorised aggregates will fall to 52% over the 2025 – 2040 period as demand for aggregates increases due to Ireland's growing population' and the requirements of strategic national plans such as Project Ireland 2040.

- 3.19 This clearly confirms that the aggregate replenishment rates are falling significantly below the market demand and there is a need for significant aggregate replenishment by means of new planning permissions for extension to existing pits / quarries or new greenfield quarry development.
- 3.20 On this basis there is clear need to replenish and provide for long term aggregate reserves such as the proven sand & gravel reserves at Kilmore, Brinny, through the granting of permission for the proposed development.

Do Nothing Alternative

- 3.21 If the proposed development does not proceed, the extension lands would remain in agricultural use and the existing site would be restored to agricultural after-use in due course under planning permission P. Ref. 24/06269.

Alternative Sources Of Aggregates

- 3.22 In the medium term there are no real alternatives to the current land-based sources of construction aggregates.
- 3.23 End of Waste criteria in respect of Construction & Demolition (C & D) materials for limited products and use are currently being implemented. Notwithstanding this, the volume of C&D waste suitable for recycling into secondary aggregates would be considered very low in comparison to the overall demand for aggregates. The demographic spread of the population results in only the large urban centres potentially being capable of generating sufficient volumes of construction and demolition (C&D) waste to justify a commercial operation producing secondary aggregates going forward.
- 3.24 In the longer term (>25 years), there may be some scope for extraction of sand and gravel from marine sources.
- 3.25 In the absence of significant volumes of aggregates from recycled / secondary and marine sources, land-based deposits (such as the sand & gravel resources at Brinny) will continue to be the main source of construction aggregates in Ireland, including the wider Cork Region.

Alternative Locations

- 3.26 Sand & gravel resources provide the raw materials for concrete aggregates and other construction materials. Keohane Readymix are continuously assessing potential lands for sand & gravel extraction, including both lands that could form extensions to their existing sand & gravel pits and lands for new "greenfield" sand & gravel pit developments.
- 3.27 The current planning application is for extension of the existing sand & gravel pit at Kilmore, Brinny, Co. Cork.
- 3.28 At the current time, there is no suitable alternative replacement pit location available to the applicant in the Brinny area. It is generally accepted that the overall timeframe for development of a 'greenfield' quarry site (from initial site selection, land acquisition, preparation of a planning application and accompanying EIAR, through planning process and site development to extraction of aggregates) takes between 5 and 10 years. On this basis it is important to replenish sand & gravel reserves on a continuous basis.
- 3.29 Notwithstanding the above, the extension of the existing pit would be beneficial in planning terms by eliminating the need for:
- Extracting additional materials from other pits within the county, should the applicant be unable to develop a new 'greenfield' site in the event that the existing pit ceases operation. This would result in faster depletion of aggregate resources at these other locations and potentially result in future intensification of those operations;
 - Haulage of materials by road from other pits within, and outside the county, with potentially longer haulage distances and increased traffic levels on the wider road network.
- 3.30 The extension of the existing sand & gravel pit at Brinny will assist in continuing to provide extraction from a proven aggregate resource within an established operation, with no significant increase in environmental emissions.
- 3.31 This development is not like a factory for example that can be located at many locations; this is a resource tied development. Aggregates can only be worked where they exist and where the environmental effects of working such resources can be managed to an acceptable level.
- 3.32 On the basis of the above, it is considered that extension of the existing pit, subject to continued implementation of best environmental management practice and compliance with appropriate planning controls (i.e. planning conditions and recommended emission limit values for the sector) is consistent with proper planning and sustainable development.

Alternative Designs/Layouts

- 3.33 The proposed development comprises extension of an existing sand & gravel pit at Kilmore, Brinny. Alternative designs and layouts have been considered and these alternatives have included:

Extraction Area: options for maximising the extension area over the full land interest ownership were considered. The extent of the extension area has been reduced to provide suitable separation distances to residential dwellings;

Phasing of Extraction / Restoration: options for phasing of extraction were considered. The phasing plan adopted allows for extraction and restoration of the eastern part of Area 1 at the earliest opportunity to minimise potential impact on the closest dwellings to the development.

Processing plant location: the location of the existing processing plant has been reviewed and is considered to be a suitable location for the development going forward. It provided a suitable separation distance to residential dwellings.

Alternative Processes

- 3.34 Keohane Readymix are a company with expertise and experience in the field of sand & gravel extraction, aggregates production, and manufacturing of concrete products.
- 3.35 The Applicant uses / will use established industry standard and best practice mechanical extraction techniques to extract sand & gravel. This extracted sand & gravel will be processed using the existing screening and washing plant in line with best practice for the sector. Alternative extraction and processing techniques are not considered relevant in this instance.