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## Introduction

- 3.1 This Environmental Impact Assessment Report (EIAR) provides supporting information to accompany a planning application to Offaly County Council submitted by BD Flood Unlimited Company (referenced as BD Flood within the EIAR), in respect of a proposed new sand and gravel extraction development at Derryarkin townland, Croghan, Rhode, Co. Offaly.
- 3.2 The proposed development being applied for under this planning application will consist of:
- An overall application area of c. 19.5 hectares;
  - Phased extraction of sand and gravel (wet working) over an area of c. 11.7 hectares with processing that includes crushing and screening and all ancillary works and structures;
  - Provision of new site facilities to include wheelwash (c. 35m<sup>2</sup>), weighbridge (c. 69m<sup>2</sup>); mobile welfare pod facility (c. 16m<sup>2</sup>) consisting of office, canteen, toilet and drying room; dedicated parking area, perimeter vegetation planting and fencing.
  - Access to the site will be via an existing entrance onto the local access road to the north of the site;
  - Progressive restoration of the site to naturally regenerated wildlife habitat and a permanent water body;
  - The proposed development life is for 15 years to complete extraction and restoration operations.
- 3.3 In the consideration of alternatives below, the need for the development, the do-nothing alternative and the issues of alternative sources of aggregates and alternative site locations have been addressed.

## Need for the Development

- 3.4 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.
- 3.5 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.
- 3.6 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”.*
- 3.7 The extractive industries are considered important not just as a source of supply to a variety of sectors both domestic and for export, but extractive industries supply aggregates that are

- an essential requirement for Ireland's future. Project 2040 will not happen without a secure supply of aggregates.
- 3.8 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.
- 3.9 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.
- 3.10 Based upon an average consumption rate of c. 350 tonnes of aggregates for every new house, the proposed extraction development at the Derryarkin is equivalent to supplying enough building aggregates to construct c. 4,000 houses.

### Essential Aggregates (2019 report): Providing for Ireland's needs to 2040

- 3.11 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<sup>1</sup> (ICF) in a major publication issued by them in October 2019. This report is provided in **Appendix A** of the accompanying Planning Report.
- 3.12 "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.
- 3.13 The report identifies that demand for aggregates in Ireland at 12 tonnes per capita is twice the current EU average, due to Ireland's infrastructural deficit, dispersed pattern of settlement and resulting large road network. The Federation warns that scarcities of some aggregates are now emerging in the Eastern and Midland regions, due to natural shortages, a lack of forward planning and delays and other shortcomings in the planning process. 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".*

### Essential Aggregates (2025 Report): An Evidence-Based Assessment to Inform Ireland's Planning Policy

- 3.14 As a follow up to the 2019 report, the ICF commissioned RPS to examine current replenishment rates of authorised aggregate reserves in Ireland to determine the current timeframes for planning decisions and provide recommendations to facilitate the long-term

<sup>1</sup> BD Flood is a member of the ICF

- sustainably supply of essential aggregates with the State in order to deliver on housing and infrastructure needs, upon which the national strategic plans such as 'Project Ireland 2040' and 'Housing for All' are highly dependent upon.
- 3.15 The RPS study, titled '*Essential Aggregates – An Evidence Based Assessment to Inform Ireland's Planning Policy*' established that the future successful delivery of national strategic plans such as 'Project Ireland 2040' and 'Housing for All' is highly dependent on a reliable supply of high-quality aggregates and that approximately one billion tonnes of aggregate will be required to meet the expected demand in the construction and development sector over the 15-year period extending out to 2040.
- 3.16 The report is provided in **Appendix B** of the accompanying Planning Report for reference, with its headline finding on aggregate supply noting a worrying trend downwards:
- "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.*
- Planning permission has been refused for over half the volume (56%) of aggregate extraction for which authorisation was sought over the 2017 – 2024 period within the Greater Dublin Area (Dublin, Kildare, Meath and Wicklow).*
- At current levels of land area authorisation, the replenishment rate of authorised aggregates will be 24% over the 2025 – 2040 period in the Greater Dublin Area."*
- 3.17 The RPS study recommended that national planning policy should urgently address the need for and facilitate the long-term sustainable supply of essential aggregate reserves. In particular, it was recommended that national planning policy explicitly recognise that:
- Aggregate materials (stone, sand and gravel) are a strategic national resource, essential for the future development of Ireland and fundamental to meeting societal needs;
  - The targets and objectives of 'Housing for All', 'Project Ireland 2040' and the 'Climate Action Plan' will require an adequate and steady supply of aggregates over the long-term;
  - Local access and proximity to aggregate resources is essential to reduce construction costs and transport carbon emissions;
  - A proactive national approach to safeguarding access to aggregate reserves is required; and
  - The planning system needs to ensure that the replenishment rate of authorised aggregate reserves is sufficient to provide a stable supply of aggregates of the required quality.
- 3.18 The report also recommended that these policies should also be adopted at local and regional level and be applied / implemented by Local Authorities and An Coimisiún Pleanála when making determinations on development applications.

### Office of Planning Regulator ' Quarries and the Local Authority Plan'

- 3.19 The need for timely replenishment of aggregate reserves was further emphasised by a Case Study Paper on '*Quarries and the Local Authority Plan*', published by the Office of the Planning Regulator (OPR), also in May 2025. The stated aim of the study was to address knowledge gaps, provide support for both practitioners and planning authorities and to highlight best practice as the planning system embarks on further reform. The study was

- largely informed by detailed feedback to a questionnaire issued to 11 planning authorities and 3 regional assemblies.
- 3.20 The OPR paper highlighted that the average length of time to make a decision on a planning application for quarry development was 34 weeks for Local Authorities and 42 weeks for An Bord Pleanála. The report concluded that a link must be made between the need for Ireland's future housing and infrastructure and the raw material supply chain that is required to facilitate its delivery and development. The report also highlighted the need to ensure that this supply chain in raw materials identified and protected.
- 3.21 The paper further highlighted that approximately 40% of national civil and construction related activity occurs in the Dublin region and, accordingly, this is where the highest demand for aggregates exists.
- 3.22 The OPR paper recognises and acknowledges that the stable supply of aggregates is critical to supply and sustain the construction industry in Ireland, and that local or regional shortages of extractable aggregate resource around areas of greater demand can create a higher carbon footprint and lead to higher development costs as a result of the requirement to haul aggregates and materials over greater distances.

### Offaly County Development Plan 2021-2027

- 3.23 The Offaly County Development Plan (OCDP) 2021-2027 is the statutory plan detailing the development objectives/policies of the authority, covering the application area. The aim of the plan is to provide a positive vision for Offaly which will enable the county to continue to make a significant contribution to national economic recovery by promoting sustainable development and facilitating stable economic growth thus delivering long term benefits for the citizens of the county.
- 3.24 Under Chapter 5 of the County Development Plan, Section 5.7.8 *Aggregates and Minerals* states:

*"The Council recognises the importance of sand and gravel extractions in the economic life of the county and its importance as a valuable source of employment in parts of the county. It is also recognised, however, that exploitation of deposits can have a seriously damaging environmental impact on the county's natural landscape, in particular its esker network. Offaly County Council acknowledges that a satisfactory balance is required between the needs of the building industry and the need to protect the environment.*

*The Council recognises the importance of ensuring that those extractions which would result in a reduction of the visual amenity of areas of high amenity or damage to areas of scientific importance or of geological, botanical, zoological and other natural significance including all designated European Sites are not to be permitted.*

*The Council requires that all such workings should be subjected to landscaping requirements and that worked out quarries should be rehabilitated to a use agreed with the Planning Authority. The use of these rehabilitated sites shall be limited to wastes such as soil, stone and subsoils and sites shall be authorised under the appropriate waste regulations.*

*The Planning Authority will have regard to the Department of the Environment's Guidelines for Planning Authorities for Quarries and Ancillary Activities 2004 (and any updated editions) when assessing applications relating to the extraction industry in the county."*

### Local Planning Projects

- 3.25 The existing concrete batching plant facility is strategically positioned to provide a 'local' concrete supply to a range of major existing, permitted and planned projects within the general Rhode – Rochfortbridge area, including but not limited to:

- Yellow River wind farm (recently constructed);
- Lumcloon Energy 220kV Gas Insulated Switchgear (GIS) Electrical substation and two 220kV underground transmission cables, interface compounds and pylons and associated works (An Coimisiun Pleanala case reference VA25M.312783) (recently constructed);
- Bord na Mona Combined Cycle Gas Turbine and Open Cycle Gas Turbine Thermal Power Plant, Electricity Grid Connection including 2 no. substations, and associated buildings, plant, site works, service and ancillary development at Derrygreenagh (An Coimisiun Pleanala case reference PA19.319023 currently awaiting decision);
- Red Admiral DC Data Centre Facility and Decentralised Energy Resource within an overall development boundary area of 243 hectares including a solar farm on 168 hectares (WCC P. Ref. 25/60344 at Further Information Stage);
- Rhode LDES Limited development of a 22-hectare site. The proposed development comprises (i) two (2no.) air dome structures for the storage of carbon dioxide at atmospheric pressure (each 500m x 120m x 34m high) and associated cooling, compression, pumping and power generation equipment and machinery (ii) a single-storey storage and control building, (iii) internal site access roads and connection to existing and consented roads at Rhode Green Energy Park, (iv) underground electrical cable connection to Derryiron 110kV substation, (v) all civil engineering works, surface water and foul water drainage, landscaping, lighting and security fencing (OCC P. Ref. 24/60289 granted permission August 2025);
- Newleaf Energy Limited combined heat and power generating biomass gasification plant with integrated carbon capture and utilisation technology to provide renewable energy and electrical grid support services on a 2.45-hectare site. The development will comprise: (i) open area feedstock reception bunkers (gross area of 425.58sqm), which will provide for the intake and temporary storage of biomass material for gasification. (OCC P. Ref. 20/237 granted permission May 2021: not yet constructed);
- Highfield Solar Limited solar pv energy development with a total site area of circa 96.6 hectares, to include one single storey electrical substation building and associated compound. (OCC P. Ref. 16/246 granted permission January 2017: not yet constructed, permission expires in 2027);
- Planning permission for 20 no. dwellings and foul and surface water drainage works and all associated ancillary siteworks to facilitate this development including the upgrade of the existing agricultural entrance to a vehicular entrance and provision of access roadway, footpaths and public lighting at Rhode. (OCC P. Ref. 24/60266 granted permission February 2025: not yet constructed);
- OBM Solar Limited for the construction of an extension to the permitted solar pv and battery storage development permitted at Srah, Greenhills and Wood, Rhode, Co. Offaly permitted under planning permission reference: 20/494. The extension will comprise additional solar panels on ground-mounted frames, 6 single storey electrical inverter/transformer units, the omission of the security fencing along the northern and eastern boundaries shared with the boundaries of planning permission reference: 20/494. (OCC P. Ref. 21/4488 granted permission December 2021: not yet constructed);
- Dumper Development Ltd. for development and construction of a logistics warehouse at the site of the former site compound for the M6 Motorway project, a site of 2.99 Hectares at Farthingstown Rochfortbridge. The development which will consist of the construction of a logistics warehouse. (WCC P. Ref. 22/247 granted permission February 2023: development under construction);

- St Josephs Secondary School Rochfortbridge redevelopment including demolition, refurbishment and new development. (WCC P. Ref. 23/60253 granted permission February 2024: development not yet commenced).

### Construction Aggregates

- 3.26 Natural rock, sands and gravels (called aggregate in the extraction industry) are important, valuable and highly prized resources in the construction materials sector. The aggregates have a use in almost all residential, commercial, retail and industrial building, including the manufacture of ready-mixed concrete, mortar, blocks, pipes, pre-cast floors, slabs, walls and tanks, construction of road foundations, production of road surfacing materials (asphalt), use as rail bedding, backfill to structures and trench support for water supply / wastewater pipes, use for surface water and land drainage etc.
- 3.27 The supply of high-quality aggregates has presented problems for the Irish construction sector in the past and continues to do, principally as a consequence of;
- the relative shortage of such permitted resources nationally;
  - their distance from key markets;
  - their occurrence in environmental sensitive areas; and
  - deficiencies in connecting road transport infrastructure.
- 3.28 The construction end-use ultimately determines specific requirements for the grade and quality of the aggregates to be used in construction. The sand and gravel which occurs at the site is of a quality that is suitable for multiple uses including concrete, mortar, and asphalt production. The continued and ever-increasing regulation of the construction industry and construction materials sector is also driving the requirement and demand for high-grade construction materials.
- 3.29 This planning application is for the establishment of a greenfield sand and gravel pit operation. The proposed pit is located in an area favourable to extraction activity and it is considered that the proposed sand and gravel extraction operations at this location can be justified on the following basis:
- adjacent (c. 600m) to the existing permitted BD Flood Concrete Batching Facility for which it will provide the aggregate supply of materials;
  - use of the sand and gravel will be solely for use in the production of concrete thereby maximising its potential use and value;
  - existing and long history of sand and gravel extraction within the immediate vicinity of the application site;
  - application site is a proven source of high-quality sand and gravels;
  - ongoing and continued increases in the level of construction and development activity in the midlands and eastern regions is generating ever increasing demand for construction materials;
  - within an appropriate topographic setting i.e. well screened from surrounding areas;
  - remote location, but with access to the regional and national roads network and a low annual extraction rate will minimise HGV traffic movements on the local road network;
  - best practice industry standard extraction methods can be used; and

- the proposed development will be carried out by a long established and experienced operator in the extractive and ancillary concrete manufacturing industry with a proven track record in planning and environmental compliance within their overall pit / quarry portfolio.

## Do Nothing Alternative

- 3.30 If the proposed development does not take place, the lands would remain in use for agricultural purposes, and there would be a loss of a proven and valuable aggregate supply within the lands.

## Alternative Sources of Aggregates

- 3.31 For the foreseeable future there are no real alternatives to primary land-won aggregates. At present, the use of secondary (recycled) aggregates in Ireland is at an early stage in development. The volume of C&D waste suitable for recycling into secondary aggregates is low in comparison to the overall demand for aggregates. The demographic spread of the population results in only the large urban centres generating sufficient volumes of construction and demolition (C&D) waste to justify a commercial operation producing secondary aggregates.
- 3.32 In the longer term, there may be some scope for extraction of sand and gravel from marine sources.
- 3.33 In the absence of a significant increase in the sources of recycled / secondary and marine sources, land-based deposits (such as the proven sand & gravel reserves at Derryarkin) will continue to be the main source of construction aggregates both nationally and regionally.

## Alternative Locations

- 3.34 This development is not comparable to a factory or other commercial enterprise that can be located at many potential locations. It is a resource-based development and therefore the aggregates can only be worked (extracted) where they are present in-situ, as acknowledged in Section 9.11 of the MCDP 2021-2027.
- 3.35 It is further recognised within paragraph 4.13 of the *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* prepared by the Department of Housing, Planning and Local Government in August 2018:
- “For example, some projects may be site specific so the consideration of alternative sites may not be relevant.”<sup>2</sup>***
- 3.36 Aggregates can only be worked where they exist and where the environmental effects of working them can be minimised. However, this is not the only prerequisite which determines a suitable location for an aggregates site. Others include a willing vendor, distance from market, required quality and quantity to justify capital investments, etc. It is usually the case that a number of these prerequisites are not met, and the alternative is discounted.
- 3.37 The continuous provision of aggregates is essential to meet the needs of society. As reserves of sand and gravel and rock are finite resources and eventually become exhausted at their location, it is therefore necessary for quarry operators to continually seek out new greenfield sites in tandem with maximising or extending extraction at existing established sites. Both options are essential and required to replace existing supplies that are being

<sup>2</sup> Guidelines for Planning Authorities and An Bord Pleanála on carrying out EIA, August 2018

- worked out and to provide a security of supply of aggregates and building materials to the construction sector.
- 3.38 At the current time, the application site is considered the most suitable source of sand and gravel location available to the applicant, given its proximity to the existing concrete batching facility.
- 3.39 The application site is also adjacent to existing established pits in a relatively remote location and has a local road network providing access to and from it that has proven to be suitable for this type of development previously.
- 3.40 Notwithstanding the continual search for suitable development sites, the lands at Derryarkin site are proven to contain an economically viable volume of quality sand and gravel reserves. The site is deemed appropriate for the following reasons:
- suitability of the economic sand and gravel reserve;
  - in close proximity to the existing established concrete batching facility;
  - extent of the lands over which the applicant has an interest in, and which are available for development;
  - access and road infrastructure at the existing pit with proximity to the national road network and key transport corridors, namely the R400 regional road and M6 motorway;
  - low environmental impact: generally flat topography assists with screening of the development (no significant visual intrusion), no recorded monuments within the application area; and not within a designated ecological or landscape area;
  - detailed water and ecology studies indicate the development can proceed without impacts on the surrounding hydrogeological and ecological regimes.
- 3.41 On the basis of the above, it is considered that the proposed development, subject to implementation of best environmental management practice and compliance with appropriate planning controls (i.e. planning conditions and standard emission limit values for the sector) can be carried out without any significant environmental impacts on the surrounding area.

### Alternative Designs / Layouts

- 3.42 Alternative designs, including alternative layouts within the site were considered with particular attention being paid to the phased extraction of the development and the location of the access and ancillary facilities being located away from the nearest residences.
- 3.43 The design layout that was chosen for the proposed extraction area is considered to best minimise the potential impacts on the environment from noise, dust, visual and landscape impacts, through the design proposed.

### Phasing of Works

- 3.44 A number of phasing options have been considered for the extraction of the sand and gravel. These options looked at the direction of working; optimising the extraction scheme (topsoil stripping of the full extraction site or stripping on a phased as-needed basis); and ensuring that progressive restoration of areas could be commenced as soon as possible following commencement of extraction.
- 3.45 The design and phased layout that was chosen (as detailed on **Figure 2-3** in Chapter 2) is considered to best minimise the potential impacts on the environment from noise, dust and visual impacts, along with allowing for restoration to be commenced at the earliest opportunity.

- 3.46 The proposed extraction works will be mostly screened by intervening topography and vegetation and due to the general flat topography of the wider landscape.

### Residence Consideration

- 3.47 The proposed phased extraction scheme will be worked at distances in excess of c. 175m from the closest residential properties located to the southwest of the application site. The overall phasing will see the pit worked in a southerly direction towards the nearest residences over Phases 1-3 (and within each phase, extraction will be carried out from east to west). Phase 4 will work from south to north away from the residences. Further to this, no extraction operations are planned for Saturdays, Sundays or Public Holidays.

### Ecological Consideration

- 3.48 All external boundary hedgerows / trees will be retained throughout the life of the proposed development. There are no internal hedgerows which require removing and all external hedgerows will be retained.
- 3.49 It is proposed to plant a permanent vegetation screening corridor along the length of the western site application boundary (on the western side of the existing internal access track) and along the southern application boundary. The corridor will be planted with native species at the earliest opportunity to allow for the vegetation to become well established at the earliest opportunity.
- 3.50 The overlying soils that will be stripped to allow for the sand and gravel extraction will be used to create permanent screening berms around the periphery of the application site or used to in the restoration and regrading of the newly created water body edges.
- 3.51 The proposed design is to work the pit in a phased manner so that it will lead only to a gradual land take at any one time over the life of the development, instead of immediate overburden stripping and extraction over the full extraction footprint. This gradual land take will help to avoid any dramatic or sudden impact on the fauna of the area, instead allowing them to adapt to the workings and relocate to adjoining lands.
- 3.52 Based on experience of similar operations, it is expected that the natural regeneration of previously worked areas following extraction and restoration operations will result in an enhanced biodiversity habitat, with locally occurring grass, wildflower and scrub species, as well as aquatic species along the lakes edge. It is most likely that the lake will be regularly visited by bird species, such as Whooper Swan and Mute Swan which are observed at other wet working extraction operations within the vicinity of the site.

### Alternative Processes

- 3.53 BD Flood are a company with expertise and experience in the field of quarrying, aggregates production and the manufacture of value-added products.
- 3.54 The consideration of alternative processes is confined to alternative options for the products that are proposed to be processed at the application site. In general, the alternatives are only subtly different.