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## INTRODUCTION

### Background

- 3.1 This Chapter of the Environmental Impact Assessment Report (EIAR) addresses the topic of Alternatives in relation to the proposed development of an integrated inert waste management facility at Ballinclare Quarry comprising an inert landfill facility and complementary construction and demolition (C&D) waste and aggregate recovery facilities.
- 3.2 The application site straddles the townlands of Ballinclare and Carrigmore in Co. Wicklow. The project principally provides for the backfilling of the existing quarry void to its original (pre-development) ground level through the development and operation of an inert waste landfill which will accept imported inert soil and stone waste generated by construction projects across Counties Wicklow, Dublin and Wexford. The project will ultimately restore a disturbed landform created by past rock extraction activity to one similar to that which previously existed and which is more in keeping with the surrounding rural landscape.
- 3.3 The proposed development specifically provides for the following:
- Backfilling of the existing void at Ballinclare Quarry to original ground level by developing and operating an inert waste landfill facility with a total intake capacity of approximately 6,165,000 tonnes of inert soil and stone waste and (non-waste) soil and stone by-product and its progressive restoration to long-term scrub / grassland habitat thereafter;
  - Continued use of existing site infrastructure and services including, site / weighbridge office, staff welfare facilities, wastewater treatment system, outbound weighbridge, garage / workshop, wheelwash, hardstand areas, fuel and water storage tanks to service the proposed development;
  - Installation of a new weighbridge along the inbound lane of the quarry access road;
  - Decommissioning of any remaining fixed plant and infrastructure associated with former rock extraction activities or with aggregate, concrete and asphalt production activities at the application site;
  - Off-site removal of any materials or bulky wastes associated with the former quarrying and production activities;
  - Construction of an industrial shed (portal frame structure) at the paved blockyard area to house crushing and screening equipment and to process / recycle inert C&D waste (principally concrete, bricks, ceramics and solid bituminous waste mixtures);
  - Use of any external paved area surrounding the C&D waste processing shed as a hardstanding area for the external handling and storage of both unprocessed and processed C&D wastes;
  - Separation of any intermixed C&D wastes (principally metal, timber, PVC pipes and plastic) prior to its removal off-site to authorised waste disposal or recovery facilities;
  - Installation and operation of a soil washing plant in the former concrete / asphalt production yard in the south-eastern corner of the application site to recover sand and gravel and secondary aggregate for subsequent use in the production of construction materials;
  - Construction of an on-site (passive) wetland treatment system and attendant drainage infrastructure to treat surface water run-off / groundwater collecting in the sump / floor of the quarry area during backfilling / landfilling operations and surface water run-off from the C&D waste recovery area prior to its discharge off-site.

- Re-use of an existing storage shed as a dedicated waste inspection and quarantine facility to inspect and store suspect waste consignments as required;
  - Upgrading and ongoing maintenance of established internal haul roads across the application site;
  - Temporary stockpiling of topsoil pending re-use as cover material for phased and/or final restoration of the inert landfill / backfilled quarry;
  - Environmental monitoring of noise, dust, surface water and groundwater for the duration of the landfilling and restoration works and aggregate / C&D waste recovery activities, and for a short period thereafter.
- 3.4 The development and operation of an inert lined landfill to facilitate the backfilling and restoration of the quarry means that the development will be classified as an inert waste disposal facility and as such, in addition to planning permission, it will also require a waste licence from the Environmental Protection Agency (EPA).
- 3.5 For the purposes of this EIA Chapter, the area within the red line boundary on Figure 1-1 (in Chapter 1) is referred to as ‘the application site’ while the wider quarry landholding within the blue line boundary on Figure 1-1 is referred to as ‘the overall site’ or ‘Ballinclare Quarry’.
- 3.6 Further detail in respect of the proposed development and the application site context is provided in Chapter 2 of this EIA Report.

## Scope of Work / EIA Scoping

- 3.7 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.”*

## Consultations / Consultees

- 3.8 No consultations were undertaken specifically for the purposes of preparing this Chapter of the EIA, it is informed by informal discussions held between Kilsaran, SLR and officials from the Eastern Midlands Regional Waste Management Office during a virtual (online) meeting held on 13 November 2020.

## Contributors / Author(s)

- 3.9 This Chapter of the EIAR was prepared by Derek Luby (BE MSc. DIC MIEI), a civil engineer and Technical Director with SLR Consulting Ireland. Derek is a technical, planning and environmental advisor on minerals and waste development. He has previously been responsible for the scoping, preparation and submission of numerous EIA’s for development of inert waste facilities.

## Difficulties Encountered

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

## NEED FOR THE DEVELOPMENT

- 3.11 Kilsaran's principal business interest is in quarrying, production of aggregate and construction fill and manufacture of building materials and products. In recent years, it has made beneficial use of excess soil and stone waste generated by construction activity to backfill and restore a number of its larger worked-out pits and quarries under the EPA waste licencing regime.
- 3.12 At the present time, Kilsaran operates an EPA licensed inert soil recovery facility at Kilmessan in Co. Meath (Waste Licence Ref. No W0296-01). The company has also recently commenced operations at another recovery facility, at a former sand and gravel pit at Halverstown in Co. Kildare (Waste Licence Ref. No. W0300-01).
- 3.13 The former hard rock quarry at Ballinclare has been identified as a suitable site for an inert waste management facility incorporating a landfill to provide for intake and disposal of inert soil and stone and for complementary recovery of C&D waste generated by construction activity, both in the local area and across the wider Greater Dublin Area. The site is considered particularly suited for such development given its proximity to the M11 Motorway and the R772 Regional Road (the former N11 National Primary Road) and permitted traffic levels (associated with previous quarry activities).
- 3.14 The opportunity to use inert soil and stone / C&D waste to develop and operate an inert landfill facility and to also achieve a beneficial outcome in the process, arises as a result of a significant increase in the volume of such materials being generated by a significant lift in levels of construction activity across the Greater Dublin Area in recent years (and particularly since 2015). The increased level of construction activity has generated increased demand for waste outlets which can accept inert soil and stone waste for disposal or recovery purposes.

## Waste Policy

- 3.15 Construction and demolition waste, the bulk of which (70% to 80%) is comprised of soil and stone waste, is identified as a priority waste stream in Chapter 11 of the current Eastern and Midlands Region Waste Management Plan (EMRWMP) 2015-2021. At the time it was drafted in 2014 / 2015, much construction and demolition waste (including C&D waste which otherwise could be recovered) was being used to for 'land improvement' or 'reclamation' works or for backfilling and infilling and extracts from the plan in following paragraphs should be read in that context.
- 3.16 Section 11.2.2 of the plan states that '*given the sharp decrease in the number of operational landfills nationally, which have been a significant outlet for C&D waste in the past, alternative recovery options will be required to facilitate the recovery of C&D waste arising in future years*'. The plan is however silent about who specifically should be responsible for providing alternative outlets or intake capacity for soil and stone / C&D wastes or where these facilities should be located.
- 3.17 The EMRWMP highlights that a number of pre-existing or previously authorised C&D waste facilities, would if re-assessed today, be considered unsuitable for backfilling / infilling activities. Section 11.2.2 of the plan states that '*Many sites selected for infill facilities are considered marginal agricultural land, and may include wetland habitats or lands subject to flooding. There is an increasing recognition of the potential ecological and biodiversity value of these wetland sites. There is also a sense that at many of these sites, the deposition of waste material rather than improvement or development of the land was the primary purpose of the activity.*'
- 3.18 The EMRWMP proceeds to address future waste management requirements for C&D waste and highlights that '*Concrete, stone and other masonry-type waste can be crushed and screened as a substitute for virgin quarried stone material in a variety of engineering applications if the*

*appropriate technical criteria have been met, eg. road construction, access tracks for agricultural or forestry holdings’.*

- 3.19 The EMRWMP also highlights the suitability of former extraction sites for C&D waste disposal / recovery activities, noting specifically that *‘Quarries also frequently require large quantities of soil material to fill voids, and for other remediation and landscaping applications.’*
- 3.20 The recently published national waste plan *‘A Waste Action Plan for a Circular Economy’*<sup>1</sup> references (in Chapter 11) the major construction projects envisaged under Project Ireland 2040 and the huge potential they provide in terms of preventing and recycling of construction and demolition waste and the challenge in ensuring there is capacity to manage the waste generated. The policy document specifically states that *‘it is vital that there is sufficient capacity for the recovery and/or disposal of the envisaged increased construction and demolition waste’.*
- 3.21 The national waste plan also identifies that one of the key challenges for the construction industry in the years ahead is to expand the range and use of recycled products in the sector. As an established supplier of construction materials, Kilsaran considers that the proposed development of C&D waste and aggregate recovery activities at Ballinclare Quarry will
- (i) provide it with an opportunity to establish itself in the emerging market for recycled construction products and recycled aggregates in particular;
  - (ii) be complementary to its existing aggregate business, with aggregate recovered from the soil washing plant providing it with additional (replacement) source of sand and gravel materials for use at its concrete production plants;
  - (iii) be consistent with the stated aims of national waste policy in respect of construction and demolition waste streams;
  - (iv) allow it to establish its credentials as a leader and innovator in the development of a circular economy and beneficial use of construction and demolition waste.

## Regulatory Change

- 3.22 In January 2020, the EPA published new guidance<sup>2</sup> on acceptance criteria for soil and stone intake at authorised soil waste recovery facilities which do not have a basal or side liner to provide protection to surrounding groundwater aquifers. When implemented, the practical effect of the new EPA guidelines will be to impose tighter limits on the concentrations of potential contaminants in soil and stone which may be accepted for intake and recovery at existing authorised soil waste recovery facilities.
- 3.23 The recent EPA guidance is expected to particularly impact soil and stone waste generated by development activities at non-greenfield (or ‘brownfield’) development sites. Soil and stone excavated at such sites is more likely to exhibit some low level impact or degradation by historical activities, resulting in the presence of low level concentrations of potential contaminants such as fuel / mineral oil or trace quantities of combustion products (such as polyaromatic hydrocarbons, PAH’s).
- 3.24 Up to relatively recently, and in the absence of any other reference criteria, the established practice in Ireland was to classify many of these soils as inert by screening contaminant concentrations against the inert waste acceptance criteria set out in Council Decision 2003/33/EC<sup>3</sup>. As these

<sup>1</sup> A Waste Action Plan for a Circular Economy, Department of Environment, Climate and Communications, September, 2020, Dublin

<sup>2</sup> Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities, EPA, January 2020, Wexford

<sup>3</sup> Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.

criteria allow waste materials with low level concentrations of metals and organic contaminants from non-greenfield sites to be classified inert, soil and stone from many non-greenfield sites has, until now, been deemed in practice to be acceptable for recovery at unlined soil recovery facilities.

- 3.25 With the implementation and roll-out of the new EPA acceptance criteria at soil recovery facilities in coming years, it is expected that significant volumes of soil and stone waste which have been slightly impacted by prior land use and/or historical activity will no longer be accepted for intake at unlined soil recovery facilities and will need to be diverted instead for disposal at inert lined landfill facilities authorised to accept soil and stone / C&D waste with contaminant concentrations up to the inert waste acceptance limits set by Council Decision 2003/33/EC.
- 3.26 As the recent EPA guidance is only now being rolled out and implemented at unlined soil waste recovery facilities, it is not clear what impact it will have in diverting soil and stone waste generated by construction projects, particularly at non-greenfield sites, to lined facilities. No definitive study has yet been completed on what the regulatory impact of the new waste acceptance regime is likely to be and it will take some time for reliable statistics to emerge.
- 3.27 Notwithstanding this, Kilsaran expects that an increased proportion of soil and stone waste currently generated by construction activities at non-greenfield sites across the Greater Dublin Area will in future be diverted for disposal at lined landfill facilities and has prepared this proposal in anticipation of an increased demand for inert landfill disposal capacity emerging over the next few years.
- 3.28 Although a recently updated report on soil waste recovery / disposal capacity across the Eastern Midland Waste Region<sup>4</sup> indicated that there appeared to be sufficient soil waste recovery capacity available in the Eastern Midlands Waste Management Region, it did not undertake any detailed assessment as to the likely volume of soil and stone which would need to be diverted to lined disposal facilities as a consequence of the new EPA guidance on waste acceptance criteria at soil recovery facilities.
- 3.29 The updated capacity report indicates that in the latest year for which data is available (2018), a total of 2,789,010 tonnes of soil and stone was accepted and recovered at authorised (ie licensed, permitted and registered) soil waste recovery facilities. Although available waste statistics do not differentiate between the proportion of soil and stone waste originating from greenfield and non-greenfield sites, it is considered likely that a significant proportion of the overall waste stream is generated at non-greenfield development sites and that a proportion of this will need to be diverted to lined inert landfill facilities in the years ahead as more onerous waste intake restrictions are applied at unlined soil waste recovery facilities.
- 3.30 In addition, it is likely that the total volume of soil and stone waste intake increased further in 2019 and would be expected to increase further once construction activity fully recommences following lifting of current Covid restrictions. The updated capacity report does note in its conclusions that *'there is an increasing demand for inert landfill capacity as construction and development at brownfield sites in urban centres increases'*.
- 3.31 At the present time, there are only two active inert landfills currently operating in the Eastern Midland Waste Management Region;
- one operated by Integrated Materials Solutions (IMS) at Hollywood Great, the Naul in North Dublin (Waste Licence Ref W0129-03)

<sup>4</sup> Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity Update Report 2020, Regional Waste Management Regions, Dec 2020



- another operated by Walshestown Restoration Ltd near Punchestown, Naas, Co. Kildare (Waste Licence Ref. W024-01).
- 3.32 It is notable, that while there are landfill facilities to the north and west of Dublin city and the Greater Dublin Area (GDA), there are currently none located to the south of the city region. As well as meeting expected future demand arising from the recent regulatory change in soil acceptance criteria, it is envisaged that the inert landfill at Ballinclare will also address existing (and growing) demand for inert landfill disposal capacity generated by construction projects across the south of Dublin and southern part of the GDA / Mid-Eastern region.
- 3.33 In view of the limited availability of soil waste recovery capacity on the southern side of Dublin City and across the southern portion of the GDA / Mid-Eastern region, Kilsaran also envisages that the proposed landfill facility will also accept soil and stone waste generated within its catchment area which would otherwise be acceptable at soil recovery facilities. Such intake will be used both for construction of the soil liner and for general backfilling of the former quarry void.

### Summary

- 3.34 In light of the above, it is considered that the proposed development and operation of an integrated waste management facility at former quarry in Ballinclare can be justified on the following basis:
- the unsuitability of possible alternative outlets for infilling / backfilling with waste soil and stone in light of potential adverse impacts on their *'ecological and biodiversity value'* (Ref. EMRWMP, Pg. 107);
  - the recognition of in the current EMRWMP that *'quarries also frequently require large quantities of soil material to fill voids'*. Clearly in this instance, there is significant benefit in the proposed backfilling / landfilling of the existing disturbed landform at the quarry at Ballinclare. It will restore the landform to its original, pre-development ground level, thereby enhancing the local landscape and facilitating its return to grassland / natural habitat over the long-term;
  - ongoing and continued increases in the level of construction activity at non-greenfield sites across the region, coupled with the recent introduction of more onerous waste acceptance / intake criteria at soil waste recovery facilities will give rise to increasing demand for inert waste disposal capacity at licensed inert landfill facilities;
  - the favourable location of the application site, close to the M11 Motorway and the R772 Regional Road (the former N11 National Primary Road);
  - the pre-existing land-use and established activities at the application site and the precedent these establish in respect of the proposed development.

### ALTERNATIVE LOCATIONS

- 3.35 It should also be recognised that inert soil and stone / C&D waste disposal or recovery facilities typically accept and handle large volume of relatively low value wastes and that transportation and haulage costs account for a significant proportion of overall costs to waste generators, in this instance construction contractors and/or site developers. There is therefore a strategic and commercial value and benefit to locating inert waste management facilities in close proximity both to the markets they serve and to high quality national and/or regional road networks.
- 3.36 From an environmental perspective, proximity to markets also means that there are reduced carbon emissions associated with road haulage of construction and demolition waste to disposal and/or recovery facilities. This accords with the general principles of sustainable development.

## Development at Greenfield Site

- 3.37 The proposed establishment of an inert waste management facility at Ballinclare Quarry (incorporating an inert landfill facility and C&D waste / aggregate recovery facilities) offers clear environmental and economic advantages relative to any potential greenfield site location across the southern part of the Greater Dublin Area / Mid-Eastern Region (eg. within an existing natural depression, or benched into an existing natural slope).
- 3.38 The proposed backfilling and restoration of the former quarry void at the application site through the development and operation of a lined inert landfill facility and the importation and disposal of inert soil and stone waste, is a logical, progressive evolution from past extractive activities and is also compatible with previously permitted quarry development.
- 3.39 As was the case with the former quarry development, the inert landfill activities will essentially comprise handling, placement and transport of naturally occurring geological materials and the handling, processing and transport of construction materials.
- 3.40 Although they may differ slightly, the potential environmental impacts associated with the proposed waste disposal and recovery activities at the application site will essentially be similar in nature to those associated with previous extraction of rock and the production of concrete and asphalt at the quarry (specifically in respect of potential dust and noise emissions, potential impacts on surface water and groundwater and traffic related impacts). Likewise, the mitigation measures and environmental controls which will be used to reduce and eliminate these impacts are broadly similar to the best practice measures used in the extractive sector.
- 3.41 The development of an inert landfill at a greenfield site would not offer any potential for a long-term beneficial outcome, similar to that which would ultimately arise at the application site. On completion, the proposed landfill will reinstate the original landform at the application site and restore it to it a grassland or a natural scrub habitat.
- 3.42 Development of an integrated waste management facility at a greenfield site would also necessitate significant site development works and associated cost. Given the compatibility with past quarry activities and that fact that much of the necessary site infrastructure is already in place and can continue in service of the proposed waste facility will extend the life of pre-existing development, minimise waste, conserve resources and reduce establishment costs. As such, the proposed development will be more in keeping with the principles of sustainable development and related public policy objectives in respect of the circular economy than the alternative of development at a greenfield site.
- 3.43 It is considered that the proposed development and operation of an inert waste management facility at Ballinclare is, subject to implementation of best environmental management practices and compliance with appropriate planning and waste licensing controls more appropriate, more sustainable, less likely to generate significant environmental impacts and less likely to give rise to nuisance complaints than would otherwise be the case were a similar facility located at any alternative 'greenfield' (ie. previously undeveloped) site location.

## Development at Alternative Quarry Location

- 3.44 In the overall planning context, given its long-term beneficial impact in restoring a previously disturbed landform to its original ground profile and the reduced short-to-medium term impacts over its operational life, it is considered that the development and operation of an inert waste management facility at a former quarry site is clearly preferable to an alternative 'greenfield' site.
- 3.45 As the former quarry at Ballinclare is located above a poor aquifer which is indicated to be generally unproductive except in local zones, it is amongst one of the most appropriate locations at which an



inert landfill facility can be sited as it much less likely than any other alternative quarry location to have any impact on potential groundwater supplies or any connected watercourses or natural habitats.

- 3.46 As previously noted, the application site at Ballinclare Quarry is well served by the existing road access, is strategically located close to the national road network and has a history of comparable traffic generation / local road use associated with previous extractive activities. The former quarry is also of a size and scale (particularly with respect to void capacity) that supports the considerable capital investment required to establish and operate an inert landfill facility.
- 3.47 At the present time, having regard to the criteria and policy objectives set out in the EMRWMP, particularly around the suitability of former quarry sites for development of soil and stone / C&D waste recovery facilities, it is considered that there are unlikely to be many other strategically located inactive quarry sites of comparable size and capacity located both within the southern part of the Greater Dublin Area and within / above a poor aquifer.

### DO NOTHING ALTERNATIVE

- 3.48 If no future works or development is undertaken within the application site, the existing landform and quarry void would remain in its current disturbed state. The existing quarry floor and side slopes would continue to revegetate naturally, albeit very slowly in the absence of any soil or nutrients.
- 3.49 In the absence of any development, it is unlikely that the lands would ever be restored to any long-term beneficial land-use and that there would be a continued risk that surface activities could have a potential adverse impact on any underlying groundwater.
- 3.50 In the absence of any inert landfill facility to the south of Dublin, or across the southern part of the GDA . Mid-Eastern Region, any inert wastes generated by construction and demolition activities requiring disposal at lined landfill facilities would need to be hauled over a greater distance to more distant facilities located to the north or west of the city. This in turn would give rise to increased fuel consumption and greater air / carbon emissions, result in less efficient use of resources (HGV's / drivers) and incur additional construction and development costs than would otherwise be the case.