

CONTENTS

<b>INTRODUCTION .....</b>	<b>4-1</b>
Background.....	4-1
Scope of Work / EIA Scoping.....	4-3
Consultations / Consultees .....	4-3
Contributors / Author(s) .....	4-3
Limitations / Difficulties Encountered .....	4-4
<b>REGULATORY BACKGROUND .....</b>	<b>4-4</b>
Legislation.....	4-4
Planning Policy and Development Control.....	4-4
Guidelines .....	4-5
Technical Standards.....	4-5
Significant Risks.....	4-6
<b>RECEIVING ENVIRONMENT .....</b>	<b>4-6</b>
Site Context .....	4-6
Study Area .....	4-6
Baseline Study Methodology .....	4-7
Sources of Information .....	4-7
Environmental and Heritage Designations .....	4-7
Population .....	4-8
Employment .....	4-8
Human / Social Infrastructure.....	4-10
Sensitive Receptors.....	4-10
<b>IMPACT ASSESSMENT .....</b>	<b>4-10</b>
Evaluation Methodology.....	4-10
Employment .....	4-11
Human Health.....	4-13
Amenity .....	4-14
Traffic.....	4-15
Land Use .....	4-16
Unplanned Events.....	4-16
Cumulative / Synergistic Impacts.....	4-17

Interaction with other Environmental Receptors .....	4-17
Transboundary Impacts .....	4-17
‘Do-nothing Scenario’ .....	4-17
<b>MITIGATION MEASURES .....</b>	<b>4-18</b>
<b>RESIDUAL IMPACT ASSESSMENT .....</b>	<b>4-18</b>
Construction and Operational Stage.....	4-18
Post – Operational Stage .....	4-19
<b>MONITORING.....</b>	<b>4-19</b>
<b>REFERENCES.....</b>	<b>4-20</b>

## TABLES

- Table 4-1 Population Change 2011 – 2016
- Table 4.2 Persons at Work in Duganstown West ED and County by Occupation
- Table 4.3 Persons at Work in Duganstown West ED and County Wicklow by Industry

## FIGURES

- Figure 4.1 Surrounding Land Use
- Figure 4.2 Electoral Divisions Around Ballinclare Quarry

## INTRODUCTION

### Background

- 4.1 This Chapter of the Environmental Impact Assessment Report (EIAR) addresses the potential effects on population and human health of the proposed backfilling of an existing hard rock quarry by way of an inert landfill and the operation of a construction and demolition (C&D) waste recovery facility, and the installation and operation of a soil washing plant at Ballinclare Quarry, near Kilbride, Co. Wicklow.
- 4.2 The proposed development at Ballinclare Quarry provides for the importation, disposal and/or recovery of inert construction and development wastes generated by projects in Counties Wicklow, Dublin and Wexford and for the long-term restoration of the former quarry.
- 4.3 It is proposed to backfill the existing quarry void at the application site to original / surrounding ground level by importing and landfilling inert soil and stone waste and in so doing re-establish the landform which existed prior to quarrying. The landfilling and restoration activities will both be undertaken on an ongoing, progressive basis.
- 4.4 As part of the proposed development, suitable uncontaminated, undisturbed, natural soil waste and/or soil by-product (i.e. non-waste) which conforms to an engineering specification will be imported for re-use in the construction of the basal and side clay liners required for the inert landfill.
- 4.5 Some uncontaminated topsoil waste and/or topsoil by-product will also be imported for use in the final restoration of the backfilled landform. Topsoil will be temporarily stockpiled at the landfill facility as required, pending its re-use as cover material.
- 4.6 The proposed development also provides for the establishment and operation of a construction and demolition (C&D) waste recovery facility across the footprint of the existing paved concrete blockyard at the quarry. The principal wastes to be recycled at this facility will include concrete (ready-mixed, reinforced, blocks and/or pavement slabs), bricks and bituminous mixtures (hardened asphalt returns and road planings).
- 4.7 It also provides for the set up and operation of a soil washing plant at the former concrete / asphalt production yard in the south-eastern corner of the application site. This plant will principally recover sand and gravel and recycled (secondary) aggregates from more granular soil intake and claybound C&D materials.
- 4.8 The proposed development 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 established site infrastructure and services including, site / weighbridge office, staff welfare facilities, 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 process / recycle inert C&D waste (principally solid / reinforced concrete, bricks, ceramics and solid bituminous waste mixtures);
- Use of any remaining 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 construction and demolition (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 yard in the south-eastern corner of the application site. The plant comprises a loading hopper, a number of soil screens in series with connecting conveyor systems, a primary wastewater treatment tank (thickener), a buffer tank holding sludge and recycled water, an elevated plate press and filter cake discharge area.
- 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 final restoration of the inert landfill / backfilled quarry;
- Environmental monitoring of noise, dust, surface water and groundwater for the duration of the site backfilling and restoration works and for a short period thereafter.

4.9 The proposed maximum intake rate of inert waste for landfilling / disposal is 750,000 tonnes per annum. The maximum rate of C&D waste recovery is 50,000 tonnes per annum. The maximum combined inert waste / C&D waste intake of 800,000 tonnes / year activities will generate up to 150 HGV return trips (300 movements) each working day, or approximately 15 HDV return trips (30 movements) per hour.

4.10 All traffic to and from the proposed waste facility at Ballinclare Quarry will be routed along the L1157 Local Road, amending the previous one-way system that routed inbound traffic along the L1113 Local Road and outbound traffic along the L1157. Following discussions with the Roads Authority, provision is made for road improvements along the length of the L1157 leading up to the quarry access, including road widening to 6.0m over most of the route length (within the existing road curtilage), with road strengthening and repair overlay and road markings. The proposed road improvement works are not anticipated to require the removal of any trees along this route.

4.11 Further details on the proposed development (site infrastructure, operations, environmental management systems, and controls etc.) are provided in Chapter 2 of this EIAR.

## Scope of Work / EIA Scoping

- 4.12 The draft EPA guidelines in relation to the preparation of EIAR<sup>1</sup> note the following in respect of population and human health:
- assessment of land-use planning, and demographic issues or detailed socio-economic analysis is not generally required;
  - economic development or settlement patterns are only relevant if they give rise to new development and associated effects;
  - human health should be considered in the context of the relevant environmental topics addressed by the EIAR;
  - the effects on human health via relevant pathways (such as air, soil and water) should be considered in the context of accepted standards for exposure, dose or risk;
  - other health and safety issues are addressed under other EU directives.
- 4.13 On the basis of the guidelines, the scope of this section of the EIAR is limited to a consideration of population, employment, amenity and human health in the context of the specialist environmental topics addressed by this EIAR.

## Consultations / Consultees

- 4.14 A pre-planning consultation meeting was held between officials of Wicklow County Council and representatives of Kilsaran Concrete and SLR Consulting Ireland on 7<sup>th</sup> February 2019 at the offices of Wicklow County Council in Wicklow Town. Staff from the roads, water and environment services departments of Wicklow County Council were also in attendance.
- 4.15 Details of the proposed development were presented at the meeting and issues of potential concern to the Planning Authority were identified and discussed. Although no specific concerns were raised in respect of population or human health effects, there was a concern to ensure that any related environmental impacts, specifically in respect of water, noise or air quality (dust), would be fully assessed.
- 4.16 Following a review of published development plans and site mapping / surveys, it was considered that there was no requirement for any further formal external consultations to be carried out in respect of human health and population for the purposes of this assessment. There was however significant consultation with other specialist contributors.
- 4.17 As this development constitutes Strategic Infrastructure Development (SID), a formal consultation exercise was also undertaken with statutory consultees and nearby residents / members of the general public between October and December 2020. Details of these consultations and the feedback obtained therefrom is provided in a separate report submitted in support of the SID application to An Bord Pleanála. Any specific feedback provided in respect of human health and amenity impacts has been considered and addressed as appropriate in drafting this Chapter of the EIAR.

## Contributors / Author(s)

- 4.18 This Chapter of the EIAR was initially drafted by Crystal Leiker, a Senior Planner previously with SLR Consulting Ireland. It was subsequently reviewed and amended by Ciarán O'Sullivan, an Associate Planner at SLR Consulting Ireland. Ciarán is a qualified Town Planner with five years' experience. He

---

<sup>1</sup> Environmental Protection Agency (2017). *Guidelines on the Information to be contained in Environmental Impact Assessment Reports*. Draft dated August 2017. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford

holds a Bachelor (International, Spanish) of Geography, Planning and Environmental Policy and a Masters of Regional and Urban Planning (MRUP) from University College Dublin. He is a member of the Irish Planning Institute and the Royal Town Planning Institute. Ciarán has previously worked on numerous planning applications and EIAR's.

### Limitations / Difficulties Encountered

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

## REGULATORY BACKGROUND

### Legislation

4.20 There is no specific legislation relevant to this Chapter of the EIAR. However, the information provided within the chapter is informed by

- Section 37D and 171A of the Planning and Development Act, 2000 (as amended)
- Article 94 and Schedule 6 of the Planning and Development Regulations, 2001 (as amended)
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018

### Planning Policy and Development Control

4.21 Appendix 1 of the Wicklow County Development Plan 2016 - 2022 (CDP) outlines development and design standards required in respect of various types of development. Guidance provided in respect of extractive industries (from Page 28) states that applications for extractive related development shall be facilitated by the Council as long as the following criteria are met:

- The environment and the landscape will be safeguarded to the greatest possible extent during all life cycle stages of the process;
- Such operations have good access to, or are within reasonable distance of, the national or regional road network and do not adversely affect the residential or tourism amenity of the area;
- Satisfactory provision will be made for a beneficial after use of the land that does not conflict with other planning objectives for the area;
- The working, landscaping, restoration and after care of the site will be carried out to the highest standards in accordance with the approved scheme.

4.22 Appendix 1 of the current Wicklow CDP requires the provision of an EIAR (except for sub-threshold development) and provides a comprehensive list of information required in support of planning applications for extractive related development, including details on land use, duration of operations, processing of materials, end of life and restoration details.

4.23 Appendix 1 of the current Wicklow CDP also sets out the following criteria (on Page 32) in respect of the reclamation and restoration of quarries:

*“Where it is proposed to reclaim, regenerate or rehabilitate old quarries (that were not subject to restoration as part of the grant of permission or licence) by filling or re-grading with inert soil or similar material, or to use worked-out quarries as disposal locations for inert materials, the acceptability of the proposal shall be evaluated against the following key criteria:*

- *the impact of the proposal on the landscape;*
- *any possible loss of biodiversity that may have developed in the worked-out quarry;*

- *the impact such proposals may have on natural ground and surface water flows or networks in the area and the potential to give rise to flooding or new surface water flows onto adjoining lands or roads, and;*
- *the suitability of the road network in the area to accommodate the traffic flows of heavy vehicles that may be generated.”*

4.24 Section 5.6 of the CDP also identifies a number of objectives for the development of the rural economy, including the extractive sector, which list the following objective in relation to control of quarry / pit development:

- **EX4** - To have regard to the following guidance documents (as may be amended, replaced or supplemented) in the assessment of planning applications for quarries and ancillary facilities:
  - ‘Quarries and Ancillary Activities: Guidelines for Planning Authorities’ (2004, DoEHLG);
  - ‘Environmental Management Guidelines- Environmental Management in the Extractive Industry’ (Non-Scheduled Minerals), EPA 2006;
  - ‘Archaeological Code of Practice between the DoEHLG and the Irish Concrete Federation’ 2009;
  - ‘Geological Heritage Guidelines for the Extractive Industry’, 2008; and
  - ‘Wildlife, Habitats and the Extractive Industry – Guidelines for the Protection of Biodiversity within the Extractive Industry’; NPWS 2009.

### Waste Management

4.25 The most relevant policies of the CDP in relation to the proposed development at Ballinclare Quarry and solid waste management include the following:

- **WE2** - To require all new developments, whether residential, community, agricultural or commercial to make provision for storage and recycling facilities (in accordance with the standards set out in Development and Design Standards of this plan).
- **WE3** - To facilitate the development of existing and new waste recovery facilities and in particular, to facilitate the development of ‘green waste’ recovery sites.
- **WE6** - To facilitate the development of sites, services and facilities necessary to achieve implementation of the objectives of the Regional Waste Management Plan.

### Guidelines

4.26 This Chapter of the EIAR has been prepared on the basis of the draft *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* published by the EPA (2017).

### Technical Standards

4.27 There are no technical standards relevant to this Chapter of the EIAR. Technical standards, if any that are relevant to each pathway (noise, air, soil, water, etc) are addressed elsewhere in this EIAR.

4.28 This Chapter of the EIAR was prepared utilising Census data for 2011 and 2016, for electoral divisions that both encompass the application site, and areas immediately adjacent to it. All calculations and data are taken from this CSO data.

## Significant Risks

- 4.29 The proposed waste development at Ballinclare Quarry is a relatively conventional project providing for the landfilling / backfilling of a former hard rock quarry using inert construction and demolition waste, principally soil and stone, and the processing of other C&D wastes to produce recycled aggregate at dedicated, purpose built facilities.
- 4.30 The nature and extent of the works involved do not present any risk of a major accident or disaster which would give rise to uncontrolled emissions of dangerous substances to air, land or water which could, in turn, give rise to significant adverse impacts on the population, human health or amenity in the surrounding local area.

## RECEIVING ENVIRONMENT

### Site Context

- 4.31 The application site at Ballinclare Quarry straddles the townlands of Ballinclare and Carrigmore townlands in Co. Wicklow, approximately 2.5km to the north-west of the small settlement of Kilbride, 2.5km south of the village of Glenealy and 7.5km south west of the town of Wicklow. The existing quarry development and site infrastructure was permitted by way of Wicklow County Council Planning Ref. 07/795, dated February 2008, and subsequently by Wicklow County Council Planning Ref. 14/2118, dated January 2016.
- 4.32 The area surrounding the application site is typically rural in character and dominated by forestry and undulating agricultural land. Residential property in the vicinity of the application site generally comprises farmsteads and isolated / single rural dwellings along the local road network. The nearest dwellings to the landholding boundary are located to the south, west and north of the site, along the local road network.
- 4.33 A belt of woodland separates the application site from most receptors to the south and rising topography and/or woodland separates it from all receptors to the north. A watercourse, the Potters River, flows to the north and east of the site. Existing land use and residential development in the vicinity of the application site is shown in Figure 4-1.
- 4.34 Traffic travelling to the site from the north turns off at Junction 18 of the M11 Motorway (beside the Beehive Inn in Coolbeg) and travels south-westwards for approximately 3.8km along the L1113 Local Road before then turning east to run along a short stretch (0.6km) of the L1157 Local Road to the quarry entrance. Traffic travelling to the site from the south turns off R772 Regional Road (the former N11 National Primary Road) at the Tap Café at Kilbride and travels north-westwards along the L1157 Local Road up to the quarry entrance. At its closest point, the M11 Motorway runs approximately 0.4km to the east of the quarry.
- 4.35 Ballinclare Quarry is located in the Electoral Division (ED) of Dunganstown West (15051). However, the Glenealy ED (15054) and Dunganstown South ED (15050) abut the application site to the north and to the south / east respectively. These two ED's will be referred to collectively hereinafter as the "surrounding ED's". The ED boundaries around the application site are shown in Figure 4.2.

### Study Area

- 4.36 For the purposes of this Chapter on Population and Human Health, the study area principally comprises the townlands of Ballinclare and Carrigmore and adjoining townlands, the residences / dwellings located therein and along the local road network around the application site



## Baseline Study Methodology

- 4.37 The baseline study in respect of Population and Human Health comprises a desk-top review of online and published resources, a review of census information (2011 and 2016) for Dunganstown West ED and County Wicklow and a review of Live Register Statistics and other local information sources.
- 4.38 A review of existing residential housing and sensitive receptors in the vicinity of the application site was undertaken as part of this study. Ordnance Survey maps and aerial photography were also examined.

## Sources of Information

- 4.39 Baseline information was obtained from the following sources:
- Myplan.ie (<http://myplan.ie/index.html>);
  - Historic Environment Viewer (<http://webgis.archaeology.ie/historicenvironment/>);
  - Wicklow County Development Plan 2016-2022;
  - openstreetmap.org;
  - Live Register Statistics;
  - CSO Sap Map data;
  - Environmental topic sections of this EIAR;
  - OSi Maps;
  - Aerial Photographs.

## Environmental and Heritage Designations

- 4.40 There are no designated nature conservation sites (Special Areas of Conservation (SAC), Special Protection Area (SPA) Natural Heritage Area (NHA) or proposed Natural Heritage Area (pNHA) within or immediately adjacent to the application site. The closest such sites are the Deputy's Pass Nature Reserve SAC (Site Code 000717) and the Glenealy Woods pNHA (Site Code 001756), which, at their closest point are located approximately 1.6 km and 1.1km to the north-west of the application site respectively. Designated sites are shown on Figure 4-1.
- 4.41 There are no recorded monuments located within or immediately adjacent to the application site. The nearest recorded monuments are located approximately 200 m to the west, in a field which does not immediately adjoin the application site. These are identified as
- A church (townland of Kilmanoge) (NMS Ref. WI030-014);
  - A graveyard (townland of Kilmanoge) (NMS Ref. WI030-014001);
  - A holy well (townland of Kilmanoge) (NMS Ref. WI030-14002)
- 4.42 Although there are no Protected Structures within the application area, there are two located within the wider study area. These are:
- (i) Westaston Demesne Country House (Structure No. 30-18), a late-17th Century house which now in ruins, located approximately 0.9km to the south-west of the application area.
  - (ii) Coolacork Country House (Structure No. 31-06), a late 18th Century house located approximately 0.95km to the north-east.
- 4.43 There are no structures identified on the National Inventory of Architectural Heritage (NIAH) within the application site. The nearest structure identified by the NIAH is a two storey former gate lodge at Westaston Demesne (Structure No. 16403005), located approximately 1.3km south-west of the site. Further detail on the built heritage of the local area is presented in Chapter 12 of this EIAR.

## Population

- 4.44 The application site is located in central Wicklow and on the periphery of the Greater Dublin Area. Its location close to the motorway network means it enjoys ready access to Dublin and can benefit from its proximity to the city and gain some economic spill-over from it.
- 4.45 The review of population presented herein is based on the electoral division of Dunganstown West in Co. Wicklow (ED 15051). The change in population from 2011 to 2016, as per the Census 2016, for the electoral division, County Wicklow, Leinster and the State is outlined in Table 4-1 below.

**Table 4-1**  
**Population Change 2011 – 2016<sup>2</sup>**

	2011	2016	% Change
<b>Dunganstown West ED (15054)</b>	453	458	+1.1%
<b>Co. Wicklow</b>	136,640	142,425	+4.1%
<b>Leinster</b>	2,504,814	2,634,403	+5.0%
<b>Ireland</b>	4,588,252	4,757,976	+3.7%

## Employment

- 4.46 The closest Social Welfare Office to the application site is located in Wicklow Town, Co. Wicklow. According to the February 2020 Live Register statistics<sup>3</sup>, there were 1,100 persons on the live register in Wicklow Town. This figure dropped from 1,158 in February 2019 and 1,375 in February 2018.
- 4.47 As previously noted, the application site is located in the Electoral Division (ED) of Dunganstown West (15051) and abutted by Electoral Divisions of Dunganstown South (15050) and Glenealy (15054). According to the 2016 census results<sup>4</sup>, the Dunganstown West ED had a total population of 458. Of the 375 people who were over the age of 15,
- 199 people were at work;
  - 4 were looking for their first job;
  - 18 were unemployed having lost or given up their previous job;
  - Others were students, working at home, retired, unable to work, or other.
- 4.48 The working population of Dunganstown West ED and the wider county, is categorised by occupation type in Table 4-2 below. The table demonstrates that in Dunganstown West ED, there is a significant proportion of workers, at 20.73% of the workforce, in skilled trades occupations. It is also noted that there is a very small proportion of workers, at 1.84% of the workforce, in Sales and Customer Services occupations. This varies from the proportion at County level which is recorded at 13.89% and 6.12%, respectively.

<sup>2</sup> <http://census.cso.ie/sapmap/>

<sup>3</sup> CSO Live Register Data <https://www.cso.ie/px/pxeirestat/statire/SelectVarVal/saveselections.asp>

<sup>4</sup> CSO Census 2016 SapMap 1

**Table 4-2**  
**Persons at Work in Duganstown West ED and County Wicklow by Occupation**

Occupation	Duganstown West ED		County Wicklow	
	No.	%	No.	%
Managers, Directors and Senior Officials	14	6.45%	6,000	8.96%
Professional Occupations	33	15.20%	1,1350	16.95%
Associate Professional and Technical Occupations	24	11.06%	8,402	12.55%
Administrative and Secretarial Occupations	22	10.14%	7,037	10.51%
Skilled Trades Occupations	45	20.73%	9,302	13.89%
Caring, Leisure and Other Service Occupations	18	8.29%	5,241	7.83%
Sales and Customer Service Occupations	4	1.84%	4,096	6.12%
Process, Plant and Machine Operatives	17	7.83%	4,097	6.12%
Elementary Occupations	14	6.45%	5,504	8.22%
Not stated	26	11.98%	5,917	8.84%
<b>TOTAL</b>	<b>217</b>	<b>100</b>	<b>66,946</b>	<b>100</b>

- 4.49 A breakdown of the industry in which those at work are employed is provided in Table 4-3 below. As can be seen, local residents are principally employed in the professional services, commerce / trade sectors and agriculture / forestry / fishing sectors and collectively. These three sectors employ over 50% of the local workforce.
- 4.50 There is a notably higher percentage of local people employed in the agriculture / forestry / fishing sectors relative to the rest of the County Wicklow, with 13.57% of local residents employed in the sector compared to just 3.5% across the county as a whole. Employment in other sectors is broadly in line with that in the rest of the county, but for a notable lesser proportion of those working in the commerce and trade sector, recorded at 18.59% of the workforce, compared to 26.3% across the county as a whole.

**Table 4-3**  
**Persons at Work in Duganstown West ED and County Wicklow by Industry**

Industry	Duganstown West ED		County Wicklow	
	No.	%	No.	%
Agriculture, forestry and fishing	27	13.57%	2,062	3.49%
Building and construction	15	7.54%	3,483	5.89%
Manufacturing industries	19	9.54%	5,743	9.71%
Commerce and trade	37	18.59%	15,559	26.31%
Transport and communications	17	8.54%	5,086	8.60%
Public administration	10	5.02%	2,614	4.42%

	Duganstown West ED		County Wicklow	
Professional services	40	20.10%	13,833	23.39%
Other	34	17.08%	10,754	18.18%
<b>TOTAL</b>	<b>199</b>	<b>100</b>	<b>59,134</b>	<b>100</b>

## Human / Social Infrastructure

- 4.51 The villages of Glenealy and Kilbride act as a social and cultural hub for those living in the area surrounding Ballinclare Quarry. There is a primary school in Glenealy and churches in both villages. The nearest Garda stations are located in the towns of Rathdrum and Wicklow. The nearest HSE health centre is located in Barndarrig. The nearest general hospitals are St. Colmcilles in Loughlinstown and St Vincents, both in south County Dublin.
- 4.52 There is a community hall in with adjoining community sports facility located in Glenealy village. Barndarrig GAA club grounds are located approximately 1.5km south-west of the quarry, while Avonmore AFC (soccer) grounds are located a short distance further on, approximately 2.75km to the south-west. Oak Hill Cricket Ground in Kilbride is located approximately 2.75km to the south-east of the quarry.
- 4.53 There are a small range of retail outlets and local services provided in Glenealy, including a convenience store and pub. There are also a number of other small local based enterprises.

## Sensitive Receptors

- 4.54 As previously noted, the application site is surrounded by mostly agricultural and wooded land, with a number of isolated residential properties and agricultural holdings located across the local area and along the local road network.
- 4.55 As can be seen from Figure 4-1, there are 13No. dwellings within 500m of the application site boundary, with a further 18No. within 1,000m, the majority of which are located to the north and west. The closest residential properties are:
- Two properties located beyond the south-western property boundary, close to the T-junction between the L1113 and L1157 Local Roads (Ref.R1 and R2);
  - Three properties located beyond the north-western property boundary, closest to the Wicklow County Council compound and the T-junction with the local road to Deputy's Pass and Glenealy (Ref.R7, R8 and R9);
  - A property located approximately 200m beyond the ridgeline which delineates the northern property boundary (Ref. R10);
  - A property located approximately 250m beyond the eastern property boundary, close to the right (eastern) bank of the Kilmacurragh Stream Ref. R13);

## IMPACT ASSESSMENT

### Evaluation Methodology

- 4.56 The evaluation of effects on employment, human health and amenity comprises a qualitative assessment based on both quantitative and qualitative analysis of potential effects on the environment undertaken in other Chapters of this EIAR. The assessment also takes into account a review of relevant literature and professional judgement in relation to impact on population and human health.

- 4.57 The duration of the proposed landfilling activities is ultimately dependent on the rate of inert waste importation but is expected to be between 8 and 17 years. Should the facility operate at full capacity, at a maximum landfilling rate of up to 750,000 tonnes per annum, it is expected that landfill operations would be completed in 8.2 years. At a more modest intake rate of 350,000 tonnes per annum, it is considered that landfill operations could be completed in just over 17.6 years.
- 4.58 In addition to these activities, up to 50,000 tonnes of inert C&D waste will also be imported annually to the facility for recovery purposes and the production of recycled aggregates. Soil washing activities will cease in advance of the final phase of landfilling across the former concrete / asphalt production areas. C&D waste recovery activities at the former blockyard area will cease on completion of landfilling and restoration activities at the quarry.
- 4.59 The location and intensity of associated environmental impacts at receptors may vary somewhat as the landfilling activities move across the application site over time. The proposed rate of inert waste intake and the period over which these activities proceed means that the duration of any localised effects will generally be short-term and time-limited.

## Employment

### *Construction Stage Impacts*

- 4.60 Prior to commencement of the inert landfilling and C&D recovery activities at the application site, the following site preparation works will be required:
- Securing existing site perimeter with additional fencing / planting as required;
  - Dewatering of the quarry void prior to any basal lining / landfilling activities;
  - Cutting and mulching of any existing scrub and vegetation across the proposed development footprint and off-site removal to authorised waste facilities (undertaken in phases prior to commencement of works in designated areas);
  - Decommissioning and dismantling of any other legacy infrastructure from prior development (eg. production plant, metal, WEEE, additives etc.) and removal off-site to other Kilsaran production sites or authorised waste facilities (as case may be);
  - Installation of new weighbridge, reconfiguration of site / weighbridge office and re-establishment of staff welfare facilities and wheelwash facility;
  - Minor repair / maintenance / upgrading works to existing bunded fuel storage area and concrete slab with sub-surface drainage to hydrocarbon interceptor and soakaway area;
  - (Re-)commissioning of previously approved septic tank and wastewater treatment facilities;
  - Excavation, clearance and levelling of existing ground at proposed wetland area and construction of the wetland treatment area;
  - Construction of the proposed concrete portal frame structure (open on two sides) at the C&D waste recovery facility;
  - Construction / installation of surface water drainage infrastructure between the landfill, recovery shed and C&D waste recovery area and the proposed wetland area;
  - Installation and commissioning of the soil washing plant in the former concrete / asphalt yard in the south-eastern corner of the application site;
  - Upgrading of internal access roads across the site leading to the waste recovery facility and wetland area;
  - Establishment of environmental control and monitoring infrastructure.

4.61 This initial phase would likely provide temporary employment for at least three people, of whom two are likely to be general operative / plant or machinery operators and one who will perform the duties of a site manager / works co-ordinator for several others who are most likely be employed indirectly in undertaking the preparatory / site establishment works and installing new site infrastructure. It is considered that this will have a direct, temporary and minor positive effect and will not have a significant effect on the environment.

### *Operational Stage Impacts*

4.62 The subsequent operational phase of the proposed development will entail :

- Establishment and operation of a C&D waste management facility to manage and oversee the disposal and recovery of imported C&D wastes;
- The importation of approximately 6,165,000 tonnes of inert waste (and non-waste by-product) materials for landfilling purposes, principally soil, stone and/or broken rock generated by construction projects;
- The importation of up to 50,000 tonnes of C&D waste per annum for recovery at the C&D / waste recovery and soil washing facilities;
- The separation of any intermixed construction and demolition waste (principally concrete, metal, timber, PVC pipes and plastic) inadvertently imported to site prior to removal off-site to authorised waste disposal or recovery facilities;
- Temporary stockpiling of imported topsoil pending re-use as cover material for the final stage of landfilling;
- Restoration of the final landform to long-term heathland / grassland habitat.

4.63 The proposed development will support the direct employment of four people on a full time equivalent (FTE) basis. One individual will be nominated as the facility / site manager and will be required to manage and oversee site operations. Three others will undertake various site duties, operating plant and machinery, processing plant, waste inspections, record keeping etc. Staff will be employed for the duration of the landfilling operations (which will be between 8 and 17 years, depending on the annual rate of inert waste intake). Employment will cease on completion of landfill and restoration activities and cessation of inert C&D waste recovery operations.

4.64 The proposed development will also indirectly support and sustain employment for hauliers servicing the construction industry, as well as providing occasional employment for sub-contractors, maintenance contractors and environmental monitoring personnel and advisors as required.

4.65 In addition, the proposed development will contribute indirectly to supporting and sustaining both the local and regional economy through the provision of required additional waste disposal and recovery capacity for inert soil and stone / C&D wastes generated by construction activities.

4.66 The employment impacts associated with the operational phase of the proposed development are therefore considered to have a medium-term, direct and minor positive effect which will not have a significant effect on the environment.

### *Post – Operational Stage Impacts*

4.67 Following the cessation of landfilling operations, the final seeding, planting and restoration works on the completed landform will be undertaken, site infrastructure decommissioned and plant / materials / waste removed off-site. .

4.68 Establishment maintenance will be carried out for a period of up to 3 years following seeding and hedgerow establishment works (minimum 3 maintenance visits per year; i.e. spring, summer and

autumn). This will provide some intermittent, short-term employment for landscaping contractors over the restoration period.

- 4.69 The employment impacts associated with the post-operational phase of the proposed development are therefore considered to have a short-term, direct and indirect and positive effect which will not have a significant effect on the environment.

### Human Health

- 4.70 Ultimately, all of the effects of a development on the environment impinge upon human beings. Direct effects relate to matters such as land, water and air quality, noise, and changes to landscape character. Indirect effects relate to such matters as flora and fauna.
- 4.71 The impact of the proposed landfilling and C&D waste recovery activities at Ballinclare Quarry on human health is addressed in this sub-section by means of an appraisal of the effects of the proposed development on the environment in general, of which human beings are an integral part.

#### *Construction and Operational Stage Impacts*

- 4.72 The initial site establishment / construction phase of the proposed development will require some preparatory site works and installation of new site infrastructure. The operational stage of the development will principally entail the importation, unloading, placement and disposal of inert wastes at the landfill facility, recovery of C&D waste at the waste recovery shed and soil washing plant and environmental management activities.
- 4.73 During these stages, the potential impacts on air, noise, land and water may include the following:
- the generation of dust and/or air borne particulates, particularly during extended periods of dry weather, through the unloading and placement of inert soil and stone / C&D waste at the waste management facility, from stockpiled C&D waste and recycled aggregates at the recovery facility and the movement of haulage trucks and/or earthmoving equipment across the application site;
  - the generation of noise by the movement and operation of haulage trucks and earthmoving plant and activities at the C&D waste recovery facility and soil washing plant;
  - a risk of importing potentially contaminated materials to the facility and placing them in or on land;
  - a risk of accidental leakage or spillage of materials such as fuel / oil into the underlying soil / bedrock and ultimately to groundwater.
- 4.74 As outlined in each of Chapters 6, 7, 8 and 10 of this EIAR, a number of mitigation measures are proposed to control and minimise these effects and to ensure that the residual effects of the proposed development on human health during the construction and operational phases are acceptable and not significant. On this basis, it is considered that, with implementation of the proposed mitigation measures, there would be no likely significant temporary or permanent effects on human health during either the construction or operational stages of this development.

#### *Post – Operational Stage Impacts*

- 4.75 Following cessation of landfilling and the final restoration / seeding of the final landform, any potential effects on air, noise, land and water would cease and there would be no consequent effects on human health.

## Amenity

4.76 Potential effects on the amenity of the area surrounding the application site arising as a result of the proposed development relate mainly to potential nuisance from noise, dust, traffic, and visual effects. All such effects would however be limited, occurring for the duration of waste disposal and/or recovery activities at the application site and will effectively cease on completion of the inert landfilling and restoration activities (at which time C&D waste recovery activities will also cease).

### *Construction and Operational Stage Impacts*

4.77 The activities to be undertaken during the construction / site establishment stage are outlined previously under the 'Employment' sub-heading. This work will include securing the existing site perimeter with new fencing, provision of new infrastructure including the C&D waste recovery shed and wetland.

4.78 These activities have the potential to generate dust and noise, which could potentially cause nuisance. They will also give rise to an increase in intermittent van / HGV movements over the local road network.

4.79 The activities during the operational stage, outlined previously under the 'Employment' sub-heading also have the have the potential to generate dust and noise, which could potentially cause nuisance, particularly as a result of .

- generating dust and air borne particulates during extended periods of dry weather, through the unloading and placement of inert soil and stone at the landfill facility, stockpiling of CD waste / recycled aggregate and the movement of haulage trucks and earthmoving equipment across the application site;
- the generation of noise by the movement and operation of haulage trucks and earthmoving plant and by C&D recovery activity (including soil washing);
- an increased risk of accidental leakage or spillage of materials such as fuel / oil into the underlying soil / bedrock and ultimately to groundwater.
- the visual impact of plant and equipment working at, and moving across, the application site, particularly at later stages, as backfilled ground levels rise against the back face of the former quarry.

4.80 Existing perimeter vegetation and trees will be untouched for the duration of the operational phase of the proposed development. It is considered important to maintain the existing perimeter vegetation and woodland in place as it significantly reduces any visual disturbance to the landscape as well as also providing screening for air and noise emissions arising from the on-site waste management operations.

4.81 As outlined in Chapters 7, 8, 10 and 13 of this EIAR, a number of mitigation measures are proposed to control and minimise these effect (and any associated nuisance effect) at the closest sensitive receptors and to ensure that the residual effects of the proposed development on residential amenity are acceptable and not significant for the duration of the construction and operational phases.

### *Post – Operational Stage Impacts*

4.82 Following completion of landfilling operations, the final seeding, planting and restoration works on the completed landform will be undertaken, site infrastructure decommissioned and plant / materials / waste removed off-site. C&D demolition waste recovery activities will cease on completion of these activities.



- 4.83 The assessment of landscape and visual impacts presented in Chapter 13 of this EIAR concluded that the proposed development will, on completion, have an overall small permanent positive impact on the local landscape character and on local views into the application site and would not be significant.
- 4.84 On this basis, it is considered that over the post-operational stage, there would be no likely long-term significant effects on amenity arising from the proposed development.

### Traffic

- 4.85 The proposed development will generate traffic movements along the L1113 and L1157 local roads and along the R772 Regional Road and the M11 Motorway for the duration of the proposed inert landfilling and C&D recovery activities at the quarry.
- 4.86 Based on these assessments and having regard to local traffic flow characteristics and the changes arising after the M11 motorway opened in 2015, Wicklow County Council expressed its preference for all HGV traffic to and from the proposed waste facility at Ballinclare Quarry to be routed for the shorter distance along the L1157 Local Road (amending the one-way system that previously routed inbound quarry traffic along the L1113 Local Road and outbound quarry traffic along the L1157).
- 4.87 In light of this feedback, the Applicant has elected to route all traffic to and from the proposed waste facility at Ballinclare Quarry along the L1157 local Road as part this development proposal. It has also made provision for a comprehensive road improvement scheme along the length of the L1157 leading up to the quarry, including road widening to 6.0m over most of the route length, with road strengthening and repair overlay and road markings. Further details in respect of consultations with the Roads Authority and the proposed road upgrade works to be undertaken in advance of soil / C&D waste intake to the proposed facility, are provided in Chapter 14 (Traffic) of this EIAR.
- 4.88 Under the current proposal, the majority (c. 95%) of the HGVs travelling to the proposed waste management facility from the direction of Dublin and North Wicklow will use the M11 Motorway, exiting at Junction 18 and joining the R772 Regional Road southbound. After travelling south for approximately 4km, traffic heading for the waste facility will turn right from the R772 and onto the L1157 Local Road at the ghost island junction near the Tap Restaurant at Kilbride. The access junction to the quarry / waste facility is located along the L1157, approximately 2km north-west of the R772 junction.
- 4.89 It is estimated that c. 5% of HGV traffic will arrive from the direction of Arklow and North Wexford. This traffic will use the M11 Motorway, exiting at Junction 19 to turn onto the R772 Regional Road at Jack Whites Pub. It will then travel north for approximately 5km and turn left, off the R772, and onto the L1157 Local Road and continue up to the quarry / waste facility.
- 4.90 Under the proposed revised haul route, all HGV traffic departing the site is required to turn left and follow the upgraded L1157 Local Road back to the R772, and from there return to the motorway network.
- 4.91 An assessment of these impacts on the local road network, presented in Chapter 14 of this EIAR, concluded that, with the proposed road improvement works along the L1157 Local Road in place, no likely significant effect on road / traffic safety or on the capacity of local roads or junctions will arise were the proposed development to proceed.
- 4.92 On completion of inert landfilling / waste recovery activities and final restoration works, there will be a permanent reduction in HGV traffic movements over the public road network and through the access road junction to the application site on the L1157 local road, with consequent improvement for the human environment.

## Land Use

4.93 A key long-term benefit of the proposed inert landfilling activity and of the proposed restoration works will be the reinstatement of the subject lands to grassland / scrub habitat and some possible beneficial use for grassland based agriculture, as well as the removal of potentially unsightly extractive voids from the landscape. These effects are considered to be permanent, minor and positive. An assessment of landscape and visual impacts associated with the proposed development is presented in Chapter 13 of this EIAR.

## Unplanned Events

4.94 According to the EPA guidelines, unplanned events, such as accidents, can include *“spill from traffic accidents, floods or landslides affecting the site, fire, collapse or equipment failure on the site”*. The 2014 EIA directive refers to *“major accidents, and/or natural disasters (such as flooding, sea level rise, or earthquakes)”*.

4.95 In this instance, the vulnerability of the proposed development to accidents, unplanned events or natural disasters is relatively limited owing to

- the relatively straight-forward nature of the proposed site establishment, inert landfilling, C&D waste recovery and long-term restoration works;
- the inert nature of the waste materials to be handled on-site and the relatively isolated, rural location of the proposed works;
- the proven capability and performance of the plant, equipment and technologies to be used in executing the works and
- the well-established procedures which will be employed to manage and control the works.

4.96 Unplanned events in relation to the proposed development could potentially relate to:

- instability arising from over-steep placement of imported soils at the application site;
- spill from vehicles moving within the site;
- flooding.

4.97 Instability arising from over-steep placement of imported inert soils and stones at the application site will be minimised by site management procedures which limit the height and gradient of slopes developed in them. Localised instability in the imported materials within the application site could have a potential impact on human health and safety of personnel working there. This will be managed and mitigated through the implementation of site health and safety regulations and active management of the works (as referenced above). Any instability in the imported materials, were it ever to arise, is likely to be localised at small areas within the landfill footprint and unlikely to have any significant impacts on employment, human health or amenity beyond the site.

4.98 Chapter 14 of this EIAR indicates that the local road network would not be significantly impacted by traffic generated by the development. The risk of an accident resulting in a fuel or oil spillage is considered to be no greater in relation to the proposed development than for previously permitted extraction activities any other form of pre-existing development that relies on the transportation of goods and materials by HGVs. The potential for significant impacts on employment, human health in the wider population or amenity as a result of a fuel spillage on a local road is likely to be low and relatively localised and any potential impacts would be temporary.

4.99 The risk of flooding is considered separately in Chapter 7, Water, of this EIAR.

## Cumulative / Synergistic Impacts

- 4.100 A search of the Wicklow County Council online planning search facilities indicates that no other major developments are planned or have been granted planning permission in the last five years in the vicinity of the application site or in surrounding townlands. Planning permission for Ballynagran landfill has recently been extended for 5 years to 2026 (Planning Ref. 20/21), but all of the associated environmental impacts are established and have been factored into the baseline surveys presented in this EIAR.
- 4.101 In light of the above, it is considered that there is no potential for other development to create significant adverse cumulative impacts on the local environment. The only environmental consideration that has the potential for any cumulative impact on population and human health, and in particular on residential amenity, is future increases in traffic volumes associated with potential increases in development and local population over time.
- 4.102 Future impacts on road capacity are considered in the Traffic Impact Assessment presented in Chapter 14 of this EIAR. That assessment concludes that the proposed development would not have any likely significant adverse impact on road capacity and traffic safety across the local road network.

## Interaction with other Environmental Receptors

- 4.103 As mentioned above, all environmental factors ultimately impact upon, and interact with human beings to some degree or other. These impacts are discussed in detail in the relevant Chapters of this EIAR as follows:
- Chapter 6 – Land, Soils and Geology
  - Chapter 7 – Water (Hydrology and Hydrogeology)
  - Chapter 8 – Air Quality
  - Chapter 10 - Noise
  - Chapter 11 - Material Assets
  - Chapter 13 - Landscape
  - Chapter 14 -Traffic

## Transboundary Impacts

- 4.104 Given the location of the application site, it is not anticipated that the impacts of the proposed development would have any significant transboundary effects on population and human health.

## ‘Do-nothing Scenario’

- 4.105 In a ‘do-nothing scenario’, the proposed landfilling / restoration and C&D waste recovery activities would not proceed at the application site and the bare, disturbed landform which currently exists across much of the site would remain unchanged, with only very slow and gradual recolonization of natural vegetation occurring over time, given the absence of any soil medium or nutrients to support plant growth.
- 4.106 In dry periods, in the absence of any site management practices, dust emissions could arise from the site on an ongoing basis and surface water bodies / groundwater would be vulnerable to impacts from any future human activities at the site.

## MITIGATION MEASURES

- 4.107 Mitigation measures to be adopted during the landfilling, restoration and C&D waste recovery activities will aim to minimise any impacts of the project on surrounding sensitive receptors (primarily those associated with noise, dust and traffic). These measures are discussed in the following chapters of this EIAR:
- Chapter 6 – Land, Soil and Geology
  - Chapter 7 - Water (Hydrology and Hydrogeology)
  - Chapter 8 - Air Quality
  - Chapter 10 - Noise
  - Chapter 11 - Material Assets
  - Chapter 13 - Landscape
  - Chapter 14 - Traffic
- 4.108 As will be seen from a review of the relevant EIAR Chapters, these mitigation measures include, but are not limited to, the following :
- the use of a mobile water bowsers and potential automated sprinkler systems (if required) to suppress dust during dry weather and as required;
  - the use of a wheelwash to prevent the deposition of dust on the public road;
  - landfilling and C&D recovery activities only being undertaken during specified working hours;
  - maintaining plant and managing works activities to ensure compliance with specified noise emission levels;
  - the retention, maintenance (and strengthening) of existing boundary hedgerows, vegetation and screening berms to provide acoustic, dust and visual screening;
  - the refuelling of plant and machinery over designated sealed and drained surfaces.
- 4.109 In addition, to the proposed mitigation measures, it is anticipated that impacts associated with the proposed landfilling, restoration and C&D waste recovery activities could be controlled by further conditions attached to any planning permission granted by the Planning Authority and/or conditions attached to any waste licence issued in respect of the waste facility by the Environmental Protection Agency in due course.
- 4.110 Waste disposal and recovery activities and all associated environmental emissions will be subject to continuous, ongoing monitoring to ensure compliance with emission limit values (ELV's) set by planning and/or waste licensing consents.

## RESIDUAL IMPACT ASSESSMENT

### Construction and Operational Stage

- 4.111 Review of the identified potential impacts on the receiving environment following implementation of appropriate mitigation measures at the application site indicates that there are no significant residual impacts with respect to population, human health and amenity during the construction and operational stages of the proposed development.
- 4.112 It is therefore considered that, subject to implementation of the mitigation measures outlined in Chapters 6, 7, 8, 10 and 14 of this EIAR, the proposed development will not cause any significant impact on the population, human health and amenity of the surrounding area.

## Post – Operational Stage

- 4.113 As all potential impacts on the receiving environment are eliminated following cessation of activities at the application site, the proposed development will have no significant residual impacts with respect to population and human health during the post-operational stage.
- 4.114 The assessment of landscape and visual impacts presented in Chapter 13 of this EIAR concluded that the proposed development will, on completion, have an overall permanent positive impact on the local landscape character and on distant views into the application site.

## MONITORING

- 4.115 As outlined in Chapters 7, 8 and 10 of this EIAR, monitoring in relation to the proposed development will be undertaken in respect of noise, air, and groundwater. Refer to the relevant Chapters of this EIAR for full details of the monitoring programmes that will be implemented at the application site for the duration of the landfilling / restoration and C&D waste recovery activities.
- 4.116 Noise, dust, surface water and groundwater monitoring will be reinstated around the application site. Environmental monitoring locations shall be reviewed and revised where and as/when necessary. All environmental monitoring results will be submitted to Local Authorities and the EPA on a regular basis, in accordance with consent requirements, for review and record purposes.

## REFERENCES

**Central Statistics Office (2020)** Census Data 2011 and 2016

**Wicklow County Council (2016)** Wicklow County Development Plan 2016-2022.

**Planning and Development Act, 2000 (as amended).**

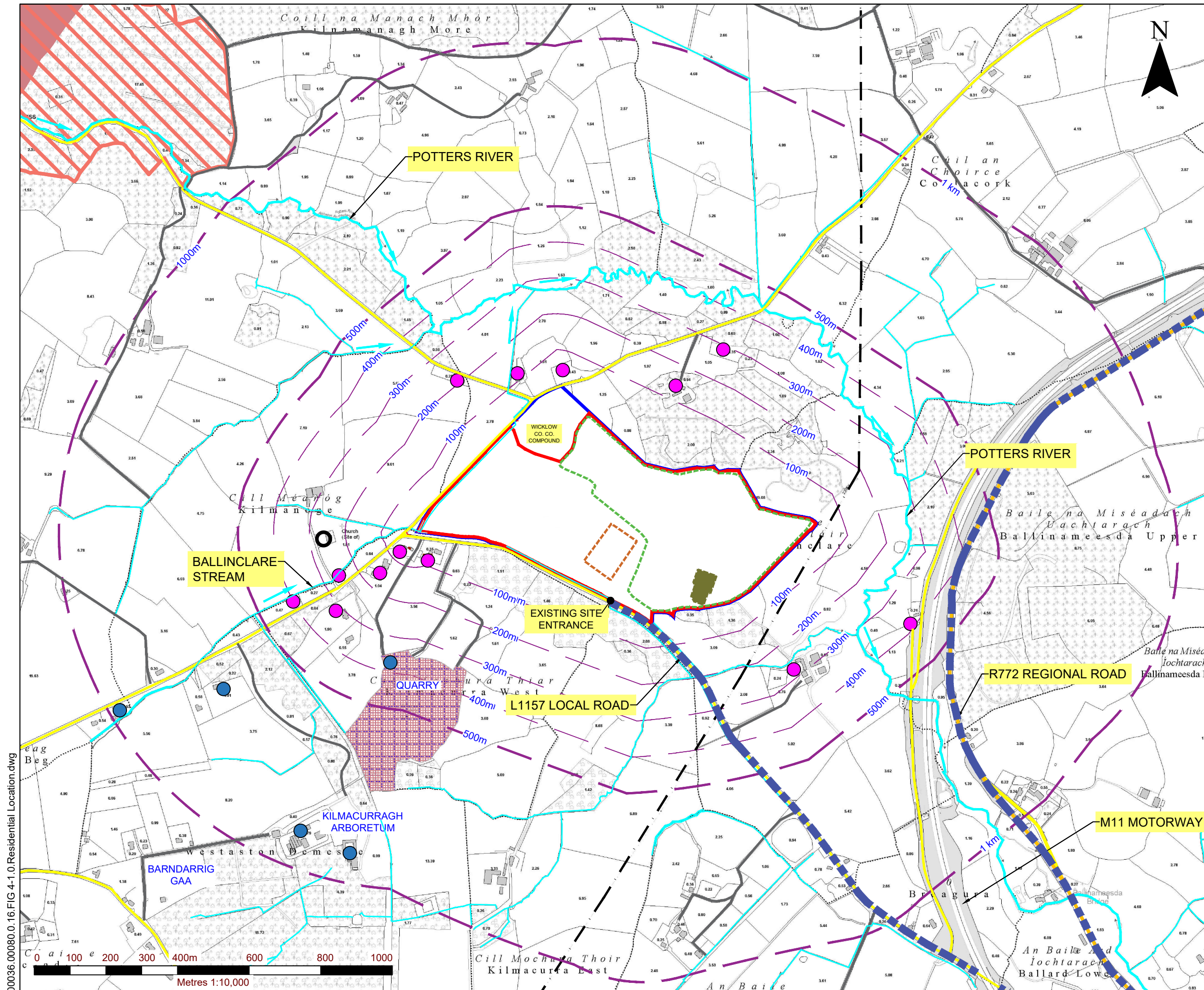
**Planning and Development Regulations, 2001 (as amended).**

**Environmental Protection Agency (2017).** *Guidelines on the Information to be contained in Environmental Impact Assessment Reports.* EPA.

## FIGURES

Figure 4-1  
Surrounding Land Use

Figure 4-2  
Electoral Divisions Around Ballinclare Quarry



**NOTES**

1. EXTRACT FROM ORDNANCE SURVEY 6 INCH MAPPING WW030 & WW0311
2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C ORDNANCE SURVEY IRELAND/ GOVERNMENT OF IRELAND)
3. EXISTING SURVEY (MAY 2016) PROVIDED BY KILSARAN

**LEGEND**

	LANDHOLDING BOUNDARY (c. 36 Ha. / 89 acres)
	PLANNING APPLICATION AREA (c. 32.5 Ha.)
	INERT WASTE LANDFILL FOOTPRINT (c. 17.0 Ha.)
	C&D WASTE RECOVERY FACILITY AREA
	PROPOSED SOIL WASHING PLANT
	500m, 1km, 2km & 3km DISTANCE OFFSETS FROM BOUNDARY
	RESIDENTIAL RECEPTORS
	COMMERCIAL RECEPTORS
	002274 - DEPUTY'S PASS NATURE RESERVE SAC
	001756 - GLENEALY WOODS pNHA
	R772 REGIONAL ROAD
	LOCAL ROAD NETWORK
	ACCESS TRACKS
	220KV ELECTRIC OVERHEAD LINE
	RIVER / STREAMS
	HAUL ROUTE

**SLR** global environmental solutions

SLR CONSULTING IRELAND  
7 DUNDRUM BUSINESS PARK  
WINDY ARBOUR  
DUBLIN 14  
T: +353-1-2964667  
F: +353-1-2964676  
www.slrconsulting.com

**KILSARAN CONCRETE**  
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

BALLINCLARE QUARRY RESTORATION &  
INERT WASTE & C+D WASTE RECOVERY FACILITY  
KILBRIDE (N11), CO. WICKLOW

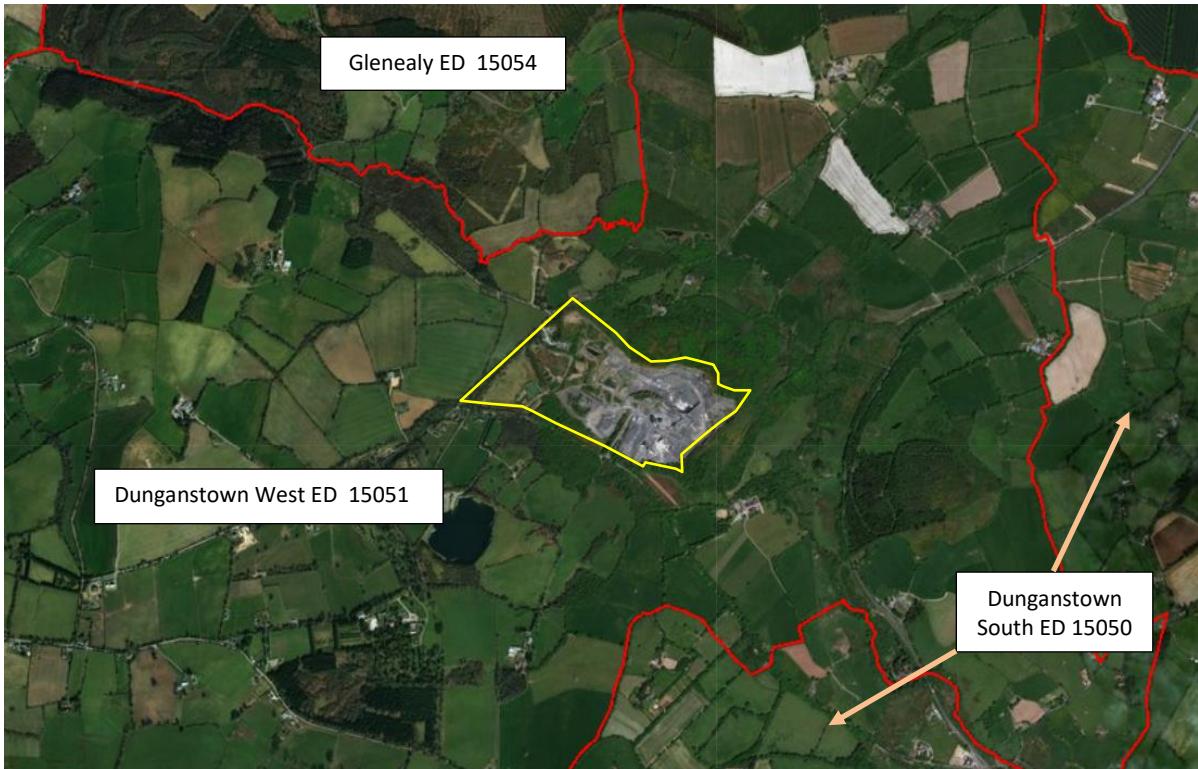
**SURROUNDING LAND USE**

**FIGURE 4-1**

Scale: 1:10,000 @ A3      Date: MARCH 2021

00036.00080.0.16.FIG 4-1.0.Residential Location.dwg





**Figure 4-2**  
**Electoral Divisions Around Ballinclare Quarry**