

CONTENTS

INTRODUCTION	1
Background.....	1
Scope of Work / EIA Scoping.....	2
Consultations / Consultees	3
Contributors / Authors.....	3
RELEVANT LEGISLATION AND POLICY	3
Legislation.....	3
Local Policy	4
Biodiversity Planning.....	4
METHODOLOGY	4
Study Area	4
Baseline Study Methodology	4
Uncertainty of Data and Limitations	5
Assessment Methodology	6
ECOLOGICAL BASELINE CONDITIONS	9
General Site Description	10
Designated Sites	10
Habitats	11
Species.....	21
Summary of Ecological Features for Impact Assessment	27
IMPACT ASSESSMENT AND MITIGATION	27
Proposed Development.....	28
Identification and Characterisation of Potential Impacts	29
Assessment of Effects and Mitigation Measures	35
Ecosystem Services	43
Cumulative Impacts	43
RESIDUAL IMPACTS	43
Ecological Enhancement And Compensation	43
Legal Implications	43
Policy Implications	43
MONITORING	44
CONCLUSIONS	44

TABLES

Table 5-1 Summary of Ecological Scope of Works and Methods Used5

Table 5-2 Criteria for Defining Important Ecological Features6

Table 5-3 Key Considerations when Characterising Impacts8

Table 5-4 Designated Sites.....10

Table 5-5 Sub-Habitat-Types Recorded in the Application Site11

Table 5-6 Description and Evaluation of Habitats and Other Features13

Table 5-7 Identification and Evaluation of Species22

Table 5-8 Identified Important Ecological Features27

Table 5-9 Sources of Potential Impacts (Construction Phase)30

Table 5-10 Sources of Potential Impacts (Operational Phase)32

Table 5-11 Assessment of Effects on Identified and Relevant Important Ecological Features36

FIGURES

- Figure 5-1 Designated Sites
- Figure 5-2 Habitat Plan

APPENDICES

- Appendix 5-A Relevant Legislation and Local Planning Policy
- Appendix 5-B Summary of Birds Recorded During the Habitat Survey (April 2019)

INTRODUCTION

Background

- 5.1 This chapter presents an Ecological Impact Assessment (EclA) undertaken by SLR Consulting Ireland (SLR) to inform the wider Environmental Impact Assessment (EIA) process and preparation of the Environmental Impact Assessment Report (EIAR) on the likely significant impacts on biodiversity from the proposed development of an integrated inert waste management facility at Ballinclare Quarry near Kilbride, Co. Wicklow which will comprise an inert landfill facility and complementary construction and demolition (C&D) waste and aggregate recovery facilities.
- 5.2 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 and restore it to a heathland / grassland habitat, similar to that which existed prior to the quarry development.
- 5.3 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, wastewater treatment system, 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 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 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; and
 - 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.
- 5.4 The proposed maximum intake rate of inert soil and stone waste for landfilling / disposal and recovery is 750,000 tonnes per annum. The maximum rate of C&D waste recovery is 50,000 tonnes per annum. Assuming that the maximum combined inert waste / C&D waste intake of 800,000 tonnes / year is sourced entirely from construction projects at off-site locations, and assuming 50 working weeks per year, 5.5 working days per week and 20 tonne loads per Heavy Goods Vehicle, the proposed waste activities will generate up to 150 HGV return trips (300 movements) each working day, or approximately 15 HGV return trips (30 movements) per hour.
- 5.5 A detailed description of the application site and the proposed development is presented in Chapter 1 and Chapter 2 of this EIAR.

Scope of Work / EIA Scoping

- 5.6 The main purpose of the EclA, presented in this Chapter of the EIAR, is:
- to identify and describe all potentially significant ecological effects associated with the proposed development;
 - to set out the design, mitigation and compensation measures required to ensure compliance with nature conservation legislation and address any potentially significant ecological effects;
 - to identify how mitigation and compensation measures will / could be delivered;
 - to provide an assessment of the significance of any residual effects in relation to the effects on biodiversity and the legal and policy implications thereof; and
 - to set out the requirements for post-construction monitoring.
- 5.7 This EclA has been undertaken with reference to guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹ ‘*the CIEEM EclA Guidelines*’, and with respect to the Environmental Protection Agency’s (EPA) draft guidelines for carrying out Environmental Impact Assessment Reports².
- 5.8 The assessment follows a standard approach based upon: the description of the existing baseline conditions within the application site; the determination of important ecological features; and the identification of all potentially significant ecological effects from the proposed backfilling and restoration of Ballinclare Quarry and operation of C&D waste and aggregate recovery facilities. The assessment also considers the likelihood of any cumulative effects, i.e. those resulting from the proposed development and other plans or projects.
- 5.9 Where a negative impact has been identified, suitable mitigation measures to prevent or reduce the impact, or where mitigation is not possible, enhancement and compensation measures are detailed to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects.

¹ CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

² Environmental Protection Agency (2017). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. Draft dated May 2017. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford.

- 5.10 Where appropriate, this Chapter also identifies how mitigation, enhancement and compensation measures will / could be delivered along with the requirements for post-construction monitoring, maintenance or management. Any residual effects arising, following implementation of mitigation and enhancement measures, are then identified and assessed, with any significant effects clearly described.

Consultations / Consultees

- 5.11 A pre-planning consultation meeting was held between officials of Wicklow County Council and representatives of Kilsaran Concrete and SLR Consulting Ireland on 7th 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.
- 5.12 Details of the proposed development were presented at the meeting and issues of potential concern to the Planning Authority were identified and discussed. At the meeting, officials indicated that a key focus for the Council would be the potential impact of the development, and any discharges therefrom, on water quality within the Potters River. They advised that any impacts on the river should be fully described and assessed by the EIAR accompanying the planning application.
- 5.13 Following a review of published development plans and available ecological data / survey information, it was considered that there was no requirement for any further formal external consultations to be carried out specifically in respect of ecology and biodiversity for the purposes of this assessment. There was however significant consultation with other specialist contributors.
- 5.14 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 ecology and biodiversity has been considered and addressed as appropriate in drafting this Chapter of the EIAR.

Contributors / Authors

- 5.15 This Biodiversity Chapter was originally drafted by Steve Judge. Steve was a former Associate Ecologist at SLR Consulting Ireland. He has 18 years' experience in ecological and environmental consultancy and holds a BSc(Hons) in Environmental Monitoring and Management. He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- 5.16 Following further development and modification of the development proposals to provide for a clay liner along the quarry floor and sides, the addition of a constructed wetland and a proposed C&D waste recovery facilities, an updated ecological site survey was conducted in May 2020. The Chapter was subsequently reviewed and updated by Martyn Macefield (MCIEEM), an Associate Ecologist at SLR Consulting Limited, with 16 years' experience in ecological and environmental consultancy. Martyn is a full member of CIEEM.

RELEVANT LEGISLATION AND POLICY

Legislation

- 5.17 The main pieces of legislation in terms of ecology in regard to developments such as this are as follows;
- The EIA Directive (2014/52/EU)
 - The Habitats Directive (92/43/EEC)

- The Wildlife Acts 1976 to 2012
- The Floral (Protection) Order 2015

Summary details of this legislation are presented in Appendix 5-A.

Local Policy

- 5.18 The relevant local planning policies have been identified in the current Wicklow County Development Plan 2016 – 2022 and are reproduced in Appendix 5-A of this EIAR. These policies are concerned with the protection and/or enhancement of biodiversity and natural heritage in County Wicklow. In broad terms these objectives and policies aim to ensure measures are put in place to identify and protect natural heritage and important environmental features within the county.

Biodiversity Planning

- 5.19 Ireland’s National Biodiversity Plan 2017–2021³ identifies actions towards understanding and protecting biodiversity in Ireland with the vision “*that biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally*”.
- 5.20 Local Biodiversity Action Plans have been produced by some County Councils, among them the Wicklow County Biodiversity Plan 2010-2015, which identify programmes of action to protect and enhance biodiversity at a local level.

METHODOLOGY

Study Area

- 5.21 The area of study includes all the land within the red line application boundary for the proposed development at Ballinclare Quarry as well as important ecological features within the zone of influence of this site with the potential to be directly and indirectly affected by the development of the proposed inert lined landfill and C&D waste and aggregate recovery facilities.

Baseline Study Methodology

- 5.22 Baseline ecological data was collated through a combination of a desk-based study and field surveys consistent with current standard methodologies and published guidelines. The scope of the ecological field surveys was defined on the basis of known and the potential ecological interest within the application site and best practice⁴.
- 5.23 Table 5-1 provides a summary of the ecological scope of works and the methods used to establish the ecological baseline conditions within the study area.
- 5.24 Over and above the scope of works in Table 5-1, it was deemed that no other specialist surveys were necessary in respect of the habitats present at the application site and their potential to support protected species.

³ Department of Culture, Heritage and the Gaeltacht (2017). *National Biodiversity Plan 2017-2021*. Department of Culture, Heritage and the Gaeltacht, Dublin.

⁴ Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall (E & F N Spon), London.

Table 5-1
Summary of Ecological Scope of Works and Methods Used

Study	Scope of Work	Study Area	Methodology
Desk-based study	Statutory and non-statutory designated sites	All sites within a 2km radius of the application site	Web-search including the National Parks and Wildlife Service (NPWS) interactive mapping facility (http://webgis.npws.ie/npwsviewer/).
	Protected, rare and notable species	2km grid squares encompassing the application site (grid square T28P)	Web-search including information held by the National Parks and Wildlife Service (NPWS) (www.npws.ie) and the National Biodiversity Data Centre (NBDC) (www.biodiversityireland.ie)
Habitat Survey	To record and classify the habitat-types and appraise on the likely presence/absence of protected species	Application site	<p>Initial site visit and walkover survey by an ecologist from SLR on 30th May 2019, with a follow up site visit on 29th May 2020.</p> <p>Standard approach to the classification and mapping of habitats in accordance with Fossitt (2000)⁵ to Level 3 and target notes where applicable to describe any feature of particular ecological interest.</p> <p>Extension of Habitat Survey method to include an assessment of habitats for evidence of, or their potential to support protected, rare or notable species (including mammals, birds, reptiles, amphibians and invertebrates) and any other important ecological feature that may require mitigation or an ecologically sensitive design in respect of the proposed development.</p>

Uncertainty of Data and Limitations

Desk-based Study

5.25 Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study area. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

Field Survey

5.26 All field surveys were undertaken at appropriate times of the year for the habitats present on site and to detect the target species, or groups of species. However, the lack of evidence of any one particular protected species does not necessarily preclude its presence at the site either at the time of survey, or in the future.

⁵ Fossitt, J. A. (2000). *A Guide to Habitats in Ireland*. Reprint 2007. The Heritage Council, Kilkenny, Ireland.

Assessment Methodology

Defining Important Ecological Features

- 5.27 In accordance with the CIEEM guidelines only ecological features (habitats, species, ecosystems and their functions/processes), which are considered to be important and potentially affected by the project should be subject to detailed assessment. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable.
- 5.28 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known / published accounts of distribution and rarity where available, and professional experience:
- International;
 - National;
 - County;
 - Local (higher); and
 - Local (lower).
- 5.28 The above categories are then applied to the features identified in baseline surveys and desk-based studies. Some feature can already be recognised as having ecological value and, as such, they may be designated as statutory or non-statutory designated nature conservation sites. Other features may require an evaluation based upon their previously un-assessed biodiversity value. A summary of the criteria used, in conjunction with professional judgement, in the evaluation of designated sites, habitats and species is provided in Table 5-2 below.

Table 5-2
Criteria for Defining Important Ecological Features

Evaluation	Criteria
International	<p>An internationally designated site or proposed site including SAC, Site of Community Importance (SCI) and SPA and Ramsar site, or an area which has been determined meets the published selection criteria for such designations, irrespective of whether or not it has yet been notified.</p> <p>World Heritage Sites, where the ecological feature assessed is an intrinsic part of the natural heritage value that led to the designation.</p> <p>An intrinsic part of the core area of a designated Biosphere Reserve.</p> <p>Undesignated sites containing 'best examples' of Annex I habitats under the EU Habitats Directive.</p> <p>Major designated salmonid waters.</p> <p>A resident or regularly occurring population of an internationally important bird species listed in Annex I and/or referred to in Article 4(2) of the EU Birds Directive and/or a species of animal or plant listed in Annex II and/or IV of the EU Habitats Directive and which is threatened or rare in Ireland or of uncertain conservation status or of global conservation in the National Biodiversity Plan.</p> <p>A resident or regularly occurring nationally significant population or of any internationally important species representing greater than 1% of its international population.</p>

Evaluation	Criteria
National	<p>A nationally designated site or proposed as a NHA or statutory Nature Reserve or Refuge for Fauna and Flora, or an area fulfilling the criteria for designations, irrespective of whether or not it has yet been notified.</p> <p>Undesignated sites containing good examples and viable areas of Annex I habitats under the EU Habitats Directive.</p> <p>A resident or regularly occurring population (>1% of the national population) of a nationally important species which is protected under the Wildlife Acts and or listed on a relevant Red Data list.</p>
County	<p>Areas identified as Areas of Special Amenity, subject to a Tree Preservation Order or Area of High Amenity where designated on the basis of their ecological value.</p> <p>Site containing area or areas of habitat types listed in Annex I of the EU Habitats Directive that do not fulfil the criteria for valuation of International or National importance.</p> <p>A resident or regularly occurring locally significant population (>1% of the county population) assessed of importance of a county important species and/or a species protected under the Wildlife Acts or listed in Annex I of the EU Birds Directive, Annex II and/or IV of the EU Habitats Directive or on a relevant Red Data list assessed to be important at County level.</p> <p>County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified within the NBP and/or Local Biodiversity Action Plan.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.</p> <p>Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</p>
Local (Higher)	<p>Locally important populations of priority species or habitats or natural heritage features identified in any Local Biodiversity Action Plan.</p> <p>A resident or regularly occurring locally significant population (>1% of the local population) and/or a species protected under the Wildlife Acts or listed in Annex I of the EU Birds Directive, Annex II and/or IV of the EU Habitats Directive or on a relevant Red Data list assessed to be important at the Local level.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality.</p> <p>Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.</p>
Local (Lower)	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife.</p>

Assessment of Impacts

5.29 The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

5.30 Table 5-3 below provides a summary of the criteria used to evaluate the residual impacts and assess the significance of any such impact.

Table 5-3
Key Considerations when Characterising Impacts

Evaluation	Criteria
Direction of impact	Positive (a change that improves the quality of the environment) or Negative (a change which reduces the quality of the environment).
Probability of occurring	Broadly defined on 4 levels: Certain (95% chance or higher), Probable (above 50% but below 95%), Unlikely (above 5% but less than 50%) and extremely unlikely (less than 5%).
Extent	Spatial or geographical area over which an impact may occur.
Magnitude	Size, amount, intensity and volume of any impact on any particular feature including any severity of effect, based on EPA’s guidance, as imperceptible, slight, moderate, significant and profound.
Duration	Effects may be described, based on EPA’s measures, as short (1 to 7 year), medium (7 to 15 years) or long-term (15 to 60 years) and permanent or temporary in ecological terms (e.g. within the lifetime of the species affected).
Frequency and timing	The number of times an activity will occur and timing of an activity.
Reversibility	Whether or not the effect can be reversed from spontaneous recovery or which may be counteracted by mitigation within a reasonable timescale.

5.31 The impact assessment process considers direct, indirect and secondary impacts and these are also defined as being negative or positive.

5.32 Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EclA, a ‘*significant effect*’ is an effect that either supports or undermines biodiversity conservation objectives for ‘*important ecological features*’ or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

5.33 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance.

- habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and
- species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

5.34 Where a potential negative impact has been identified, mitigation, enhancement and/or compensatory measures have been formulated using best practice techniques and guidance to prevent, reduce or offset a significant effect. The degree of confidence in the likely success of mitigation or compensation, based upon published studies and the experience of the assessor, is also made and any uncertainties are clearly expressed.

- 5.35 The final part of the assessment is to determine the significance of the residual impacts of the proposed scheme from an ecological perspective and also describe the implications of the proposed development from a legal and policy perspective.

Avoidance, Mitigation, Compensation and Enhancement

- 5.36 When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at a County scale should ensure no net loss of the population at a County scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.
- 5.37 Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.
- 5.38 It is important for the EIAR to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:
- Avoidance is used where an impact has been avoided e.g. through changes in scheme design;
 - Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
 - Compensation describes measures taken to offset residual effects, i.e. where mitigation in situ is not possible; and
 - Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

Assessment of Cumulative Impacts

- 5.39 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a particular location. This Biodiversity Chapter assesses the potential cumulative impacts from the proposed development with other projects which could include:
- proposals for which consent has been applied but which are awaiting determination;
 - projects which have been granted consent but which have not yet been started or which have been started but are not yet completed (i.e. under construction);
 - proposals which have been refused permission but which are subject to appeal and the appeal is undetermined;
 - constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
 - developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan.

ECOLOGICAL BASELINE CONDITIONS

- 5.40 This section provides an overview of the existing ecological baseline conditions at the application site for the proposed 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.

General Site Description

- 5.41 The application site, covering circa 32.5 hectares (ha), includes an existing quarry with an extraction void of 17.2ha. Extraction across the quarry generally extended to a floor level of approximately 37mOD. At the time of its closure, two quarry benches were being extended westwards. As a result the quarry floor is locally higher at the western end, where the first bench has only been developed to a level of approximately 52mOD. The quarry floor is also locally deeper in the central eastern area of the quarry area and extends to approximately 22mOD where a third bench had been commenced. This area effectively acts as the quarry sump at the current time.
- 5.42 The quarry is accessed via a 120m long surfaced entrance road leading off the L1157 Local Road. A concrete batching plant, aggregate plant and asphalt plant were previously located to the south-east of the quarry holding, east of the access road, in an area where rock was previously excavated to a relatively shallow depth (of between 5m and 10m).
- 5.43 Established ancillary facilities at the quarry include the main site office, a weighbridge and adjoining weighbridge office, staff canteen and toilets, a wheelwash, a bunded fuel storage area, a garage / workshop and a laboratory and will be re-used and re-purposed in the development of the proposed waste facility.
- 5.44 A number of former farm buildings and a storage yard remain in place to the west of the site access road, as does a concrete block yard which was built on foot of the recent (2016) quarry planning permission. The farm buildings comprise a stone barn with corrugated tin roof and two concrete walled barns with corrugated tin roofs. A more modern brick-built two-storey building is also present in this location. There is also an existing water management system comprising a series of attenuation and settling ponds in the north-western area of the site.
- 5.45 The surrounding landscape is characterised by mixed agricultural land with fields typically bounded by hedgerows / treelines interspersed by blocks of woodland. The landscape is dissected northwest to southeast by the Potter’s River and north to south by the M11 Motorway. Small rural settlements and isolated farmsteads are scattered across the landscape, principally along local roads.

Designated Sites

- 5.46 The application site at Ballinclare Quarry is not subject to any statutory or non-statutory nature conservation designations (SAC, SPA, NHA, Nature Reserve or pNHA). Within a 2km radius of the application site there are two designated sites, including one Natura 2000 site and one pNHA. The location of these designated sites in relation to the application site is shown in Figure 5-1. Summary details of the designated sites are presented in Table 5-4.

Table 5-4
Designated Sites

Designated Site	Reason form Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
Glenealy Woods pNHA [Site Code 001756]	Glenealy Woods comprises four separate woodland areas covering some 400ha. Deputy’s Pass is the best example of broadleaved woodland with the other woodlands consisting of mixed deciduous and coniferous woodland. The woods are important because they are almost certainly natural although they have been subject to conifer planting.	1.1km north west	National

Designated Site	Reason form Importance / Designation	Location Relative to Application Site at Closest Point	Level of Value
Deputy's Pass Nature Reserve SAC [Site Code 000717]	Deputy's Pass Nature Reserve was designated as a SAC for the following habitat types listed under Annex I of the EU Habitats Directive: <ul style="list-style-type: none"> • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in British Isles. 	1.6km north west	International

Habitats

- 5.47 The application site is part of a quarry previously used for the extraction of diorite, that was predominantly stripped of cover soil and overburden. These materials were subsequently used to construct screening berms around sections of the northern, southern and western boundary of the quarry landholding.
- 5.48 The quarry site supports a range of sub-habitat types that includes habitats created through quarrying operations, habitats that have developed through natural re-colonisation on areas historically disturbed by quarrying operations and some small areas of retained habitat that existed prior to quarrying operations.
- 5.49 The habitat types recorded within the application site based on the classification as defined by Fossitt (2000) are presented in Table 5-5 below.

Table 5-5
Sub-Habitat-Types Recorded in the Application Site

Level 1 Habitat Hierarchy	Level 2 Habitat Hierarchy	Level 3 Habitat Hierarchy	Area / Length
E - Exposed rock and disturbed ground	ED - Disturbed ground	ED3 – Recolonising bare ground	1.51ha
		ED2 - Spoil and bare ground	3.90ha
	ER – Exposed rock	ER2 – Exposed calcareous rock	1.79ha
F - Freshwater	FL – Lakes and ponds	FL8 – Other artificial lakes and ponds	7.02ha
G - Grassland and marsh	GS - Semi-natural grassland	GS2 - Dry meadows and grassy verges	3.35ha
		GS4 – Wet grassland	0.81ha
W - Woodland and scrub	WN – Semi-natural woodland	WN1 - Oak-birch-holly woodland	0.36ha
		WD – Highly modified / non-native woodland	WD1 - Broadleaved woodland
	WD3 – Conifer woodland		0.38ha
	WL - Linear woodland / scrub	WS1 - Scrub	5.28ha
		WL1 - Hedgerows	540m
		WL2 - Treelines	450m
B - Cultivated and built land	BL – Built land	BL3 – Buildings and artificial surfaces	7.21ha

- 5.50 Figure 5-2 shows the location and extent of the habitats recorded at the application site and important habitats and other features identified immediately adjacent the application site. A summary description and ecological evaluation of each of the habitat-types and any other key features is provided in Table 5-6 overleaf.

Table 5-6
Description and Evaluation of Habitats and Other Features

Habitat Feature	Description	Location	Level of Value	Rationale
Exposed Rock and Disturbed Ground				
ED4 - Active quarries and mines (including the sub-habitats ED2 - Spoil and bare ground, ED3 – Recolonising bare ground and ER2 – Exposed calcareous rock)	<p>The application site forms part of a quarry with the primary habitat of <i>ED4 – Active quarries and mines</i> historically subject to high levels of disturbance from the extraction and processing of diorite rock and from other ancillary processing facilities. Sub-habitat types include: <i>ER2 Exposed calcareous rock</i> on the quarry floor and faces; and <i>ED2 – Spoil and bare ground</i> and <i>ED3 – Recolonising bare ground</i> habitat which show little variation in their species composition with only ground coverage of vegetation distinguishing these sub-habitat types and which in places shows succession to <i>GS2 – Dry meadows and grassy verges</i> or <i>WS1 – Scrub</i> habitats.</p> <p>Vegetation where present can include: the graminoids of false oat-grass (<i>Arrhenatherum elatius</i>), false brome (<i>Brachypodium sylvaticum</i>), cock’s-foot (<i>Dactylis glomerata</i>), Yorkshire-fog (<i>Holcus lanatus</i>), annual meadow-grass (<i>Poa annua</i>) and hard rush (<i>Juncus inflexus</i>) but which never dominated the vegetation cover; and forbs comprising: scarlet pimpernel (<i>Anagallis arvensis</i>), daisy (<i>Bellis perennis</i>), rosebay willowherb (<i>Chamerion angustifolium</i>), spear thistle (<i>Cirsium vulgare</i>), marsh thistle (<i>Cirsium palustre</i>), hoary willowherb (<i>Epilobium parviflorum</i>), ribwort plantain (<i>Plantago lanceolata</i>), creeping cinquefoil (<i>Potentilla reptans</i>), creeping buttercup (<i>Ranunculus repens</i>), weld (<i>Reseda luteola</i>), common ragwort (<i>Senecio jacobaea</i>), red clover (<i>Trifolium pratense</i>), dandelion (<i>Taraxacum officinale</i> agg.), lesser trefoil (<i>Trifolium dubium</i>), scentless mayweed (<i>Tripleurospermum inodorum</i>) and colt’s-foot (<i>Tussilago farfara</i>).</p>	Application site (areas to be landfilled / backfilled)	Local (lower)	An anthropogenic habitat historically subject to high levels of disturbance with little botanical interest and offering very limited opportunities for wildlife.

Habitat Feature	Description	Location	Level of Value	Rationale
	<p>More localised species include pendulous edge (<i>Carex pendula</i>), common centaury (<i>Centaureum erythraea</i>), common mouse-ear (<i>Cerastium fontanum</i>), teasel (<i>Dipsacus fullonum</i>), common bird's-foot-trefoil (<i>Lotus corniculatus</i>), ragged-robin (<i>Lychnis flos-cuculi</i>), field forget-me-not (<i>Myosotis arvensis</i>), mouse-ear-hawkweed (<i>Pilosella officinarum</i>), selfheal (<i>Prunella vulgaris</i>), silverweed (<i>Potentilla anserina</i>), wood sage (<i>Teucrium scorodonia</i>), broad-leaved dock (<i>Rumex obtusifolius</i>), common nettle (<i>Urtica dioica</i>), common vetch (<i>Vicia sativa</i>), bush vetch (<i>Vicia sepium</i>) and tufted vetch (<i>Vicia cracca</i>).</p> <p>Scrub encroachment is evident in places that can include butterfly-bush (<i>Buddleja davidii</i>), broom (<i>Cytisus scoparius</i>), bramble (<i>Rubus fruticosus</i> agg.), grey willow (<i>Salix cinerea</i> agg.) and gorse (<i>Ulex europaeus</i>).</p>			
Freshwater				
FL8 – Other artificial lakes and ponds	<p>The floor of the quarry void has become flooded since the cessation of dewatering operations creating a relatively large extent of <i>FL8 – Other artificial lake and ponds</i>. Due to the recent history of this feature, the lake is devoid of aquatic vegetation.</p>	Application site (areas to be landfilled / backfilled)	Local (lower)	A habitat created through quarrying operations and the flooding of the quarry void of low ecological and conservation value.
	<p>A series of constructed settlement lagoons forming part of the water management system for the quarry are present in the western part of the application site. The larger of these constructed lagoons typically support broad-leaved pondweed (<i>Potamogeton natans</i>), small stands of reedmace (<i>Typha latifolia</i>) and charophyte (<i>Chara</i> sp.) with some creeping bent (<i>Agrostis stolonifera</i>), floating sweet-grass (<i>Glyceria fluitans</i>) and curled dock (<i>Rumex crispus</i>) around their margins. In shallow waters lesser spearwort (<i>Ranunculus flammula</i>) and horsetail (<i>Equisetum</i> sp.) can also be present.</p>	Application site (area to be developed as constructed wetland)	Local (higher)	<p>Anthropogenic features that have been specifically created as to provide the quarry with a water management system or semi-natural features created through the actions of quarrying operations.</p> <p>Habitat supporting a population of common frog and smooth newt.</p>

Habitat Feature	Description	Location	Level of Value	Rationale
	There is another attenuation pond at the entrance to the quarry supporting common water-starwort and reedmace with pendulous sedge (<i>Carex pendula</i>) and great willowherb (<i>Epilobium hirsutum</i>) around its margins.			
	A further series of ponds have formed in an area historically stripped of vegetation east of the constructed settlement ponds including one permanent body of water and some smaller ephemeral ponds. Wetland species include common water-starwort (<i>Callitriche stagnalis</i>), cuckooflower (<i>Cardamine pratensis</i>), common spike-rush (<i>Eleocharis palustris</i>), sharp-flowered rush (<i>Juncus acutiflorus</i>), jointed rush (<i>Juncus articulatus</i>), soft rush (<i>Juncus effusus</i>), broad-leaved pondweed, water forget-me-not (<i>Myosotis scorpioides</i>), Water-cress (<i>Rorippa nasturtium-aquaticum</i> agg.), lesser spearwort and reedmace.	Adjacent to the application site to north-east of the proposed wetland creation area	Local (higher)	Semi-natural pond habitat with a good diversity of aquatic and emergent vegetation, that provides suitable breeding habitat for amphibians, in close proximity to good terrestrial foraging habitat. Habitat supporting a population of common frog and smooth newt.
Grassland and Marsh				
GA1 – Improved agricultural grassland.	GA1 – Improved agricultural grassland habitat is found in the west of the site. Whilst the recent reduction in the intensity of management has allowed the establishment of more broad-leaved plant species, the habitat remains comparatively species-poor. Species recorded include perennial rye-grass (<i>Lolium perenne</i>), false oat-grass (<i>Arrhenatherum elatius</i>), Yorkshire fog (<i>Holcus lanatus</i>), reed canary-grass (<i>Phalaris arundinacea</i>), ribwort plantain (<i>Plantago lanceolata</i>), oxeye daisy (<i>Leucanthemum vulgare</i>), creeping buttercup (<i>Ranunculus repens</i>), and meadow buttercup (<i>Ranunculus acris</i>). Significant scrub encroachment is occurring from the north and east.	Application site (area to be developed as constructed wetland)	Local (lower)	A common and widespread habitat derived from agricultural grassland subjected to reduced management intensity. Predominantly with rank species-poor swards of low intrinsic ecological and nature conservation value.

Habitat Feature	Description	Location	Level of Value	Rationale
GS1 - Dry Calcareous and Neutral Grassland	<p>A remnant area of <i>GS1 - Dry calcareous and neutral grassland</i> is found in the north west corner of the application site in an area predominantly stripped of soils and which now forms a mosaic with <i>WS1 Scrub</i> habitat.</p> <p>The sward is dominated by sweet vernal-grass (<i>Anthoxanthum odoratum</i>) with some common bent (<i>Agrostis canina</i>), false oat-grass, cock's-foot (<i>Dactylis glomerata</i>), sheep's fescue (<i>Festuca ovina</i>), Yorkshire-fog, smooth meadow-grass (<i>Poa pratensis</i>) and soft rush (<i>Juncus effusus</i>) also present. The herbaceous component includes yarrow (<i>Achillea millefolium</i>), spear thistle (<i>Cirsium vulgare</i>), meadow vetchling (<i>Lathyrus pratensis</i>), common bird's-foot-trefoil (<i>Lotus corniculatus</i>), ribwort plantain, silverweed (<i>Potentilla anserina</i>), weld (<i>Reseda luteola</i>) and red clover (<i>Trifolium pratense</i>). Rosebay willowherb (<i>Chamerion angustifolium</i>) and bracken (<i>Pteridium aquilinum</i>) are also present in small dense stands.</p>	Outside application site to north	Local (lower)	Whilst <i>GS1 – Dry calcareous and neutral grassland</i> can potentially be a habitat of significant intrinsic ecological and biodiversity importance, the disturbed, degraded and scrub-encroached patches of the habitat at the Ballinclare Quarry are considered to be of negligible intrinsic importance. The habitat also lies outside the footprint of the area to be backfilled.
GS2 - Dry meadows and grassy verges	<p><i>GS2 - Dry meadows and grassy verges</i> habitat is found in the western part of the application site in a former agricultural field and on a screening berm.</p> <p>Other smaller areas of <i>GS2 - Dry meadows and grassy verges</i> where present typically form part of mosaic with <i>WS1 – Scrub</i>.</p> <p>These grasslands typically have swards dominated by cock's-foot with some false oat-grass, meadow foxtail (<i>Alopecurus pratensis</i>), sweet vernal-grass (<i>Anthoxanthum odoratum</i>), red fescue (<i>Festuca rubra</i> agg.), Yorkshire-fog and perennial ryegrass (<i>Lolium perenne</i>) also present.</p> <p>The herbaceous component is typically species-poor comprising of common mouse-ear, creeping thistle (<i>Cirsium avense</i>), hogweed (<i>Heracleum sphondylium</i>), ribwort plantain, meadow buttercup (<i>Ranunculus acris</i>), creeping buttercup, common sorrel (<i>Rumex acetosa</i>), red clover, common nettle and bush vetch.</p>	Application site (adjacent to area to be developed as constructed wetland)	Local (lower)	A typically common and widespread habitat predominantly with rank species-poor swards of low ecological and nature conservation value.

Habitat Feature	Description	Location	Level of Value	Rationale
	Where <i>GS2 - Dry meadows and grassy verges</i> has developed on areas historically stripped of soils, other species which may be present include yarrow (<i>Achillea millefolium</i>), glaucous sedge (<i>Carex flacca</i>), rough hawk's-beard (<i>Crepis biennis</i>), hoary cress (<i>Lepidium draba</i>), oxeye daisy (<i>Leucanthemum vulgare</i>), field wood-rush (<i>Luzula campestris</i>), silverweed (<i>Potentilla anserina</i>), greater stitchwort (<i>Stellaria holostea</i>), white clover (<i>Trifolium repens</i>), germander speedwell (<i>Veronica chamaedrys</i>), hairy tare (<i>Vicia hirsuta</i>) and common vetch.			
GS4 – Wet grassland	<p><i>GS4- Wet grassland</i> is found in a poorly-drained low-lying area to the north of the constructed settlement lagoons and either side of a band of scrub.</p> <p>The wet grassland to the north east of the band scrub is dominated by rushes including sharp flowered rush and soft rush with some hard rush also present. Other species present include creeping bent, black sedge (<i>Carex nigra</i>), greater bird's-foot-trefoil (<i>Lotus pedunculatus</i>), purple-loosestrife (<i>Lythrum salicaria</i>), silverweed, water mint (<i>Mentha aquatica</i>), water forget-me-not, lesser spearwort, creeping buttercup, curled dock and bog stitchwort (<i>Stellaria alsine</i>). Scattered throughout the sward are a number of small pools where floating sweet-grass, broad-leaved pondweed and reedmace can be present. Scrub encroachment by grey willow is evident in places.</p> <p>The wet grassland to the south east of the band of scrub is dominated by soft rush and most of the species present in the adjacent <i>GS2 - Dry meadows and grassy verges</i> habitat.</p>	Application site (area to be developed as constructed wetland)	Local (higher)	<p>A typically common and widespread habitat.</p> <p>A habitat showing signs of succession to marsh supporting a good diversity of wetland species in a local context providing opportunities for a wide range of wildlife including birds, amphibians and invertebrates.</p>

Habitat Feature	Description	Location	Level of Value	Rationale
Woodland and Scrub				
WN1 – Oak-birch-holly woodland	<p>A block of WN1 – <i>Oak-birch-holly woodland</i> habitat is present in the south of the application site adjacent to and east of entrance of the quarry.</p> <p>The woodland has a canopy dominated by sessile oak (<i>Quercus petraea</i>) but with some sycamore (<i>Acer pseudoplatanus</i>), ash (<i>Fraxinus excelsior</i>) and beech (<i>Fagus sylvatica</i>) also present. The understorey includes alder (<i>Alnus glutinosa</i>), downy birch (<i>Betula pubescens</i>), hawthorn (<i>Crataegus monogyna</i>), holly (<i>Ilex aquifolium</i>), honeysuckle (<i>Lonicera periclymenum</i>), laurel (<i>Prunus laurocerasus</i>), blackthorn (<i>Prunus spinosa</i>) and grey willow. Bramble is also prominent throughout.</p> <p>The ground flora is dominated by Ivy (<i>Hedera hibernica</i>) but also includes amongst others foxglove (<i>Digitalis purpurea</i>), remote sedge (<i>Carex remota</i>), pignut (<i>Conopodium majus</i>), herb-Robert (<i>Geranium robertianum</i>), ground-ivy (<i>Glechoma hederacea</i>), creeping soft-grass (<i>Holcus mollis</i>), wood-sorrel (<i>Oxalis acetosella</i>) wood sage and common dog-violet (<i>Viola riviniana</i>) as well as broad buckler fern (<i>Dryopteris dilatata</i>), male fern (<i>Dryopteris filix-mas</i>) and some bracken (<i>Pteridium aquilinum</i>).</p> <p>Bryophytes are conspicuous including common feather-moss (<i>Kindbergia parelonga</i>) and common tamarisk-moss (<i>Thuidium tamariscinum</i>).</p> <p>A short section of ditch supports great willowherb, floating sweet-grass, soft rush and reedmace.</p>	Application site (area not to be developed)	Local (higher)	<p>Habitat with some affinities to, but unlikely to qualify as Annex I habitat of Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in British Isles.</p> <p>A small block of semi-natural woodland that forms part of a larger tract of similar woodland.</p> <p>Habitat providing opportunities range of fauna including birds and invertebrates.</p>
WD1 - Broadleaved woodland	<p>A plantation of WD1 - <i>Broadleaved woodland</i> dominated by ash is present in the south and west of the application site. Other tree species present include some sycamore, alder, hazel (<i>Corylus avellana</i>), sessile oak, aspen (<i>Populus tremula</i>) and wild cherry (<i>Prunus avium</i>).</p>	Application site (area not to be developed)	Local (lower)	<p>A relatively young woodland plantation that is of low ecological and conservation value but provides some opportunities for breeding birds and invertebrates.</p>

Habitat Feature	Description	Location	Level of Value	Rationale
WD3 – Conifer woodland	WD3 – Conifer woodland habitat dominated by Norway spruce (<i>Picea abies</i>) is present in the south central area of the application site, along the western side of the access road leading into the quarry. Bramble typically forms a dense understorey with some Elder (<i>Sambucus nigra</i>) also present.	Application site (area not to be developed)	Local (lower)	A typically common and widespread habitat that is of low ecological and conservation value but provides some opportunities for birds.
WS1 - Scrub	Patches of WS1 – Scrub is found throughout the quarry site often forming a mosaic with other habitat-types. The scrub is typically comprised of either gorse, butterfly-bush grey willow and bramble or mixtures containing all these species. Other species which may also be present in mosaic with other habitat-types include sycamore, alder, ash and downy birch,	Application site	Local (lower)	A typically common and widespread habitat at various stages of development. Habitat providing opportunities for a range of species including birds and invertebrates.
WL1 – Hedgerows and WL2 - Treelines	Remnant sections of WL1 hedgerows and WL2 Treelines are present in the western part of the application site. These are typically dominated by Hawthorn with semi-mature ash in the treelines. Other woody species present include blackthorn, dog-rose (<i>Rosa canina</i> agg.) and elder. The ground floras are typically dominated by ivy but with some lords-and-ladies (<i>Arum maculatum</i>), foxglove, herb-Robert ground-ivy and greater stitchwort present.	Application site (area not to be developed)	Local (lower)	A typical common and widespread habitat. Remnant sections of relatively species-poor hedgerows and treelines that at this current time are of low ecological and conservation value but provide some opportunities for breeding birds and invertebrates.
Cultivated and Built-land				
BL3 Buildings and artificial surfaces	BL3 Buildings and artificial surfaces cover the majority of the south eastern corner and central parts of the application site including the weighbridge, offices, workshops, disused quarry processing area, site of the former concrete batching and asphalt plants as well as other ancillary areas, product storage areas and internal roads.	Application site	Local (lower)	Anthropogenic habitats of negligible ecological value.

Habitat Feature	Description	Location	Level of Value	Rationale
	<p>Former farm buildings are present in the central part of the site comprising a stone barn with corrugated tin roof and two concrete walled barns with corrugated tin roofs.</p> <p>In addition, a more modern brick-built two-storey building is also present in this central part of the quarry with other various buildings associated with the quarrying operations.</p>			
Other features within the immediate surrounding area				
Potter's River	<p>The Potter's River which receives the discharge from Ballinclare Quarry has a mean channel width of 3.5m at normal water level flowing over a consolidated bed of gravels, cobbles and stones with a series of riffles with a depth of water ranging from 10 to 20cm in depth during normal flows.</p> <p>The channel is largely devoid of vegetation except for greater water-moss (<i>Fontinalis antipyretica</i>) and filamentous green algae.</p>	320m north west of application site at closest point	Local (higher)	<p>The Potter's River is not identified as a salmonid river under the European Communities (Quality of Salmonid Waters) Regulations 1988 (SI No.293).</p> <p>However, as part of a previous planning application at the quarry White Young Green undertook consultation with the Eastern Regional Fisheries Board and it was reported that downstream of the quarry site is an important spawning ground for salmon and trout.</p> <p>A typically common and widespread habitat. Habitat providing an ecological corridor linking features of potential higher ecological value in the wider surrounding landscape.</p>

Species

- 5.51 Details of protected, rare and notable species records within a 2km radius of the application site (encompassing grid square T28P) were obtained during the desk-based study and during the subsequent Habitat Surveys, where general observations and searches were made for the presence, or potential presence of protected, rare and/or notable species for flora and fauna.
- 5.52 Table 5-7 overleaf provides a summary of species of importance and an evaluation of the site for these species.

Table 5-7
Identification and Evaluation of Species

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Flora				
Protected, rare and notable species	No records of protected, rare or notable species of flora were returned by NBDC for the search area.	During the Habitat Survey no protected, rare or notable species of flora were recorded at, or immediately adjacent the application site.	Not applicable	All reasonable likelihood of absence
Non-native invasive species	No records for non-native invasive species of flora, as listed under the either the Wildlife Act 1976 (as amended) or European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) were returned by NBDC within the search area.	During the Habitat Survey no non-native invasive species, as listed under statutory legislation, were recorded as present within the application site. However, some rhododendron (<i>Rhododendron ponticum</i>) was recorded in woodland outside Kilsaran’s landholding growing in woodland along the roadside and adjacent a screening berm in the south west corner of the application site.	Not applicable	All reasonable likelihood of absence
Mammals				
Badger	NBDC returned a solitary record for badger (<i>Meles meles</i>) within the search area. This record does not relate to the application site.	During the Habitat Survey no evidence or signs were found to indicate the presence of badger (i.e. setts, tracks, latrines, snuffle holes or hairs) within the application site, or its immediate surrounding area.	Not applicable	Not present
Bat assemblage	NBDC returned records for three bat species within the 2km search area including Daubenton’s bat (<i>Myotis daubentonii</i>), Leisler’s bat (<i>Nyctalus leisleri</i>), pipistrelle (<i>Pipistrellus sensu lato</i>), soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) and brown long-	The quarry faces have a number of superficial cracks but no obvious significant fissures and crevices which are likely to be used by bats for roosting purposes.	Local (higher)	All bat species are fully protected under the Wildlife Act 1976 (as amended) and the EC (Birds and Natural Habitats) Regulations 2011 (as amended).

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
	<p>eared bat (<i>Plecotus auratus</i>) from the 2km search area.</p> <p>None of these records relate to the application site itself but roosts for brown long-eared bat, Daubenton’s bat, Leisler’s bat and soprano pipistrelle have all been recorded in buildings within a 1km radius of Ballinclare Quarry.</p>	<p>All of the existing buildings and structures within the quarry site are considered to have negligible bat roosting potential due to their construction and current condition. During an inspection of the buildings during the Habitat Survey no evidence was found to suggest bats have used, or are currently using these structures for roosting purposes (i.e. droppings, urine staining, scratch marks and feeding remains).</p> <p>The majority of trees within the quarry site are assessed as having negligible suitability for roosting bats due to their age and condition with no obvious features offering bat roosting potential (i.e. holes and cavities, cracks and splits in major limbs, loose bark, ivy cover and dense epicormic growth). However, some of the mature oaks present in the WN1 woodland to the east of the quarry entrance are assessed as having low to moderate suitability and unlikely to support a roost of high conservation status in accordance with the current published criteria by the Bat Conservation Trust (BCT) guidelines⁶.</p> <p>The application site is assessed as providing low to moderate habitat suitability for commuting and foraging bats that is well connected to the wider landscape.</p>		<p>Site unlikely to support any bat roosts of high conservation status.</p> <p>Site lies within the core sustenance zone (CSZ) of at least four species of bats with recorded roosting locations in proximity of Ballinclare Quarry. However, the application site is unlikely to be important or critical to any particular species of bat, or for maintenance of the local population status of any bat species given the alternative habitat with foraging and commuting suitability for bats in the context of the surrounding landscape.</p>

⁶ Bat Conservation Trust (2016). *Bat Surveys for Professional Ecologists - Good Practice Guidelines 3rd Edition*. Bat Conservation Trust, London.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Other mammal species	NBDC returned solitary records for Irish stoat (<i>Mustela erminea</i> subsp. <i>hibernica</i>) and pine marten (<i>Martes martes</i>) as well as for the non-native species of brown rat (<i>Rattus norvegicus</i>) and grey squirrel (<i>Sciurus carolinensis</i>) within the search area. None of these records relate to the application site.	During the Habitat Survey rabbit (<i>Oryctolagus cuniculus</i>) and fox (<i>Vulpes vulpes</i>) were both observed in various parts of the application site. Whilst the site has the potential to support a number of small mammals, no evidence was found to indicate the presence of any other protected species of mammal.	Local (lower)	Site provides some localised value to small mammals but is not likely to be critical in maintaining the local population status of any particular species.
Birds				
Bird assemblage	NBDC returned records for three species of birds for the search area. None of these species are listed under Annex I of the EU Birds Directive.	The habitats present in the application site provide opportunities for a range of birds associated woodland, lowland farmland, permanent pastures, open water and quarries. During the Habitat Survey a total of 19 species of birds were recorded visually and/or aurally at and in the vicinity of the application site. Of the species recorded only one is listed under Annex I of the EU Birds Directive, namely peregrine falcon (<i>Falco peregrinus</i>), but was not recorded as breeding at the time of the Habitat Survey. None of the bird species recorded are red listed ⁷ but three are amber listed ⁸ Birds of Conservation Concern in Ireland (BoCCI) ⁹ .	Local (lower)	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. The application site provides breeding and foraging opportunities for a range of typically common and widespread species but is not likely to be important or critical for any particular individual species or local populations of birds given the availability of alternative habitat in the wider surrounding area.

⁷ Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recovery.

⁸ Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose populations has declined historically but made a substantial recovery; rare breeders; and those with international important or localised populations.

⁹ Colhoun, K. & Cummins, S. (2013). *Birds of Conservation Concern 2014-2019*. Irish Birds, 9: 523-544.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
		A full list of the birds recorded during the Habitat Survey and their conservation status is provided at Appendix 5-A.		
Reptiles				
Common lizard	NBDC returned no records for common lizard (<i>Zootoca vivipara</i>) within the search area.	Although common lizard is a species that can be found in wide range of habitats, the application site provides sub-optimum habitat for this species. No common lizards were observed during the Habitat Survey and it is considered that this species is not likely to be present at this site.	Not applicable	All reasonable likelihood of absence
Amphibians				
Common frog	NBDC returned no records for common frog (<i>Rana temporaria</i>) within the search area.	During the Habitat Survey, common frog tadpoles were recorded in the settlement lagoons and the other large pond in the western part of the application site. At this location these waterbodies are surrounded by high quality terrestrial habitat for common frog. No evidence of common frog was found in the main part of the quarry where the breeding and terrestrial habitat for this species is assessed as poor.	Local (lower)	Protected under the Wildlife Act 1976 (as amended). A typically common and widely distributed species in Ireland and Co. Wicklow.
Smooth Newt	NBDC returned no records for smooth newt (<i>Lissotriton vulgaris</i>) within the search area.	During the Habitat Survey smooth newt adults were recorded in the settlement lagoons and all other ponds in the western part of the application site. At this location, these waterbodies are surrounded by high quality terrestrial habitat for smooth newt.	County	Protected under the Wildlife Act 1976 (as amended). A species widely distributed throughout Ireland but not having been recorded in large parts of Co. Wicklow.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
		<p>No evidence of smooth newt was found in the main part of the quarry, where the breeding and terrestrial habitat for this species is assessed as poor.</p> <p>Based on the recorded evidence of smooth newt during the Habitat Survey, it is estimated that the application site is likely to support an exceptional population size class (>100 individuals).</p>		A species listed as being of importance in the Wicklow Biodiversity Action Plan 2010-2015 and which is likely to have an exceptional population size class at this location.
Invertebrates				
Invertebrates	NBDC returned records for species including: International Union for Conservation of Nature (IUCN) red listed butterfly species ¹⁰ of wall (<i>Lasiommata megera</i>) and dingy skipper (<i>Erynnis tages</i>) listed as Endangered and Near Threatened respectively; and common carder-bee (<i>Bombus pascuorum</i>) also red listed as Near Threatened ¹¹ .	<p>During the Habitat Survey no rare or notable species of invertebrate were observed within the application.</p> <p>Whilst no site is without invertebrate interest, it is considered not likely, given the habitat types, that the application site would support any protected invertebrate species.</p>	Local (lower)	The site provides potential habitat for a wide range of invertebrates but is unlikely to be important or critical to any particular species or taxonomic group given the availability of alternative habitat in the wider surrounding area.
Other Important Species				
Other species not identified above	NBDC did not return any records for any other rare or notable species within the 2km search area.	During the Habitat Survey, no other protected, rare or notable species were recorded. Though the application site may support low numbers of common and widespread species it is considered highly unlikely that any other specially protected species would be present based on the habitats present.	Not applicable	All reasonable likelihood of absence

¹⁰ Regan, E.C., Nelson, B., Aldwell, B., Bertrand, C., Bond, K., Harding, J., Nash, D., Nixon, D., & Wilson, C.J. (2010). *Ireland Red List No. 4 – Butterflies*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Ireland.

¹¹ Fitzpatrick, U., Murray, T.E., Byrne, A., Paxton, R.J. & Brown, M.J.F. (2006). Regional Red List of Irish Bees. Higher Education Authority, Ireland.

Summary of Ecological Features for Impact Assessment

- 5.53 In accordance with CIEEM guidelines only ecological features considered to be important should be carried forward to any detailed assessment. It is not necessary to carry out a detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable. Therefore, where receptors have been evaluated at a value of ‘Local (lower)’ no further assessment is deemed necessary as the impact of the proposed inert landfill and C&D waste and aggregate recovery facilities on these receptors is not likely to be of significance.
- 5.54 However, where protected species are present and there is a potential for a breach in wildlife legislation, then these species are considered as important ecological features regardless at what level they have been evaluated
- 5.55 Based on the above, the identified important ecological features with the potential to be affected by the proposed waste management activities at Ballinclare Quarry and carried forward for further ecological impact assessment are detailed in Table 5-8 below.

Table 5-8
Identified Important Ecological Features

Key Features	Important Ecological Feature	Level of Value
Designated Sites	Deputy’s Pass Nature Reserve SAC	International
	Glenealy Woods pNHA	National
Habitats	FL8 – Other artificial lakes and ponds (excluding the flooded quarry void)	Local (higher)
	WN1 – Oak-birch-holly woodland	Local (higher)
	GS4 – Wet grassland	Local (higher)
	Potter’s River	Local (higher)
Species	Bat assemblage	Local (higher)
	Bird assemblage	Local (lower)
	Common frog	Local (Lower)
	Smooth newt	County

IMPACT ASSESSMENT AND MITIGATION

- 5.56 This section assesses the ecological impacts from the proposed inert landfilling and restoration of Ballinclare Quarry, the creation of the water treatment wetland, and the construction and operation of a C&D waste and aggregate recovery facilities on important ecological features identified from the preliminary desk-based study, baseline surveys and evaluation of the ecological features. Both qualitative and quantitative information has been used to identify likely significant ecological impacts, including the positive, negative, direct, indirect and the cumulative environmental effects.
- 5.57 To assess the effects of the proposed scheme it is essential that the impacts that could arise are identified and characterised. The impacts that require consideration in the EclA are based upon knowledge of the development and of the important ecological features. This can only be undertaken with a thorough understanding of ecological processes and how flora and fauna react to the range of impacts that could occur.

Proposed Development

- 5.58 A detailed description of the development is presented in Chapter 2 of the EIAR, but in summary the scheme principally provides for the development and operation of an inert, lined landfill facility to facilitate backfilling and restoration of Ballinclare Quarry with imported (inert) soil and stone wastes generated by construction projects in Counties Wicklow, Dublin and Wexford.
- 5.59 It is envisaged that the landfill activities at the quarry will ultimately restore ground levels to original / surrounding ground level, and in so doing, will also re-establish the landform which existed prior to quarrying. Landfilling and restoration activities will be undertaken on an ongoing, progressive basis.
- 5.60 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. 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.
- 5.61 A passive water treatment wetland covering approximately 3.8 hectares will be created to clean and improve the quality of the water pumped from the quarry void prior to its discharge to a local surface water course, and ultimately the Potter's River. Post-completion of the development the water treatment wetland will also be used to treat surface water run-off from the completed landform.
- 5.62 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 and a soil washing plant at the former concrete / asphalt production yard. The principal wastes to be recycled at the C&D facility will include concrete (ready-mixed, reinforced, blocks and/or pavement slabs), bricks and bituminous mixtures (hardened asphalt returns and road planings). The principal wastes to be recovered by the soil washing plant will be more granular (*ie.* more sandy / gravelly) soils and claybound C&D intake.
- 5.63 The key features of the proposed development are as follows:
- The backfilling of the existing quarry void at Ballinclare, through development and operation of an inert landfill facility to provide for the disposal of imported inert soil and stone waste and the progressive restoration of the quarry to long-term scrub / grassland habitat thereafter;
 - Continued use of established site infrastructure and services including, site / weighbridge office, staff welfare facilities, weighbridge, wastewater treatment system, garage / workshop, wheelwash, hardstanding 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 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 landfilling operations and any 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 site backfilling and restoration works and for a short period thereafter.

5.64 The traffic to and from the proposed waste facility at Ballinclare Quarry will be routed along the L1157 Local Road, amending the current one-way system that routes inbound traffic along the L1113 Local Road and outbound traffic along the L1157. Provision has been made for road improvements 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. The proposed road improvement works are not anticipated to require the removal of any trees along this route.

Identification and Characterisation of Potential Impacts

5.65 The potential ecological impacts from the proposed waste activities at Ballinclare Quarry and the importation / handling of inert waste materials, fall into three main categories:

- Impacts arising from the construction phase;
- impacts arising from the operational phase; and
- impacts arising post-operational phase, following restoration of the quarry.

Potential Impacts and Interaction with Important Ecological Features (Construction Phase)

5.66 The potential ecological impacts from the proposed construction of the construction and demolition waste recovery shed and the 3.8 hectare water treatment wetland have the potential to directly or indirectly impact a range of the important ecological features present at the site. The relevant important ecological features which are likely to be, or have the potential to be, directly or indirectly affected from any particular impact source based on the potential zone of influence of the development, in the absence of mitigation, are outlined in Table 5-9.

Table 5-9
Sources of Potential Impacts (Construction Phase)

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
<p>Habitat loss, damage and fragmentation</p>	<p>Habitat loss involves the direct destruction or physical take-up of vegetation, or the removal of other structures with conservation interest. Habitat loss may also occur indirectly as a result of a change in land-use or water management, for instance the drying-up of ponds or through induced successional events leading to a change in habitat type.</p> <p>Habitat fragmentation is concerned with spatial processes, such as negative edge effects (e.g. colonisation by ‘aggressive’ species or successional changes) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.</p> <p>Fragmented habitats are likely to be more vulnerable to external factors that may have a negative effect upon them; e.g. disturbance, and may be less resilient to change (including climate and management change) than connected habitats because colonising species may be unable to reach the habitat to re-colonise in the event of species loss.</p> <p>Habitat loss can have a direct impact on individual populations and assemblages of species result in the direct loss of individuals or populations of animal species, or indirectly by increasing levels of stress placed upon populations of some species through negative edge effects (e.g. predation pressure) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.</p> <p>The zone of influence of the proposed development is assessed to be restricted to the application site and immediate adjacent areas only. The proposed road improvement works will be restricted to the carriageway, pavements and verges only, and are not anticipated to affect any roadside trees.</p>	<p>FL8 – Other artificial lakes and ponds</p> <p>WN1 – Oak-birch-holly woodland</p> <p>GS4 - Wet grassland</p> <p>Bat assemblage</p> <p>Bird assemblage</p> <p>Common frog</p> <p>Smooth newt</p>
<p>Disturbance from human activity, noise and vibration</p>	<p>Increases in disturbance, as a result of human activity, such as construction, can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.</p> <p>The response of individual species to increased levels of human disturbance will depend upon a number of factors including the sensitivity, reproductive status, previous exposure to human disturbance, behaviour during the event, species tolerance to disturbance, location in relation to the source, availability of alternative nearby habitat, and environmental factors (i.e. topography, vegetation and atmospheric conditions which can influence noise levels).</p> <p>The level of disturbance will also be dependent upon the existing ambient noise levels and maximum noise levels.</p> <p>Noise</p> <p>It is generally accepted that for noise, certain species or groups of species can be impacted upon up to a distance of up to 300m from its source for high level and discontinuous disturbance, with these distances reducing for low level and/or continuous disturbance levels.</p>	<p>Bird assemblage</p>

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
	<p>Evidence suggests that, in general, wildlife, with the exception of the most sensitive, will adjust and tolerate long-term increases in low-medium-level and continuous noises.</p> <p>Guidance published under AQTAG09¹² indicates that where noise levels are below 80dB L_{Amax} and 55dB L_{Aeq,1hr} as measured at a nest site for birds or other feature used by wildlife it is considered unlikely that it will have an adverse impact on any such species.</p> <p>With regard to potential impacts from unmitigated noise associated with construction / operational activities, the closest Natura 2000 site is Deputy's Pass SAC 1.6km away. A noise assessment of the potential acoustic impact of site activities at Deputy's Pass SAC undertaken for this EIAR indicated that resultant noise levels were considerably below the prescribed permitted limit of 55L_{Aeq,1hr}dB(A). The assessment concluded that the risks of significant noise impact at this location, or any more distant Natura 2000 site, was negligible given that the resultant ambient noise level was comparable to that of a rural area. The proposed site activities are almost certainly acoustically unnoticeable at Deputy's Pass SAC.</p> <p>Visual Disturbance</p> <p>Visual disturbance from human activity can include the movement of people, machinery and plant and which can result in the disturbance of species by causing increased anxiety and flight due to perceived danger. The response to visual disturbance is highly variable between species, threat type and habituation to human contact and can typically range from 50m to 500m although for many species this is generally below 300m in open situations.</p>	
<p>Dust deposition</p>	<p>Traffic movements, ground works, earthworks, general site preparatory works, the stockpiling and handling of construction materials and other associated activities all have the potential to generate dust.</p> <p>Literature suggests that the most sensitive species are affected by dust deposition at levels above 1000 mg/m²/day¹³ which is five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans.</p> <p>Where large amounts of dust are deposited on vegetation over a long time-scale (a full growing season for example) there may be some adverse effects upon plants restricting photosynthesis, respiration and transpiration. Furthermore, it can lead to phytotoxic gaseous pollutants penetrating the plants. The overall effect would be a decline in plant productivity, which may then have indirect effects on the quality of the surrounding habitats and associated fauna. The amounts of dust deposited and its effects are also dependent upon weather conditions, as in wet weather less dust will be generated and that which has been deposited upon foliage is likely to be washed off.</p>	<p>WN1 – Oak-birch-holly woodland GS4 Wet grassland</p>

¹² Ormerod, L., Goodlad, N. and Horton, K. (2005) AQTAG09 – Guidance on the Effects of Industrial Noise on Wildlife. Air Quality Technical Advisory Group.

¹³ Farmer, A.M. (1993). *The Effects of Dust on Vegetation – A Review*. Environmental Pollution Vol.79, Issue 1, Pages 63-75.

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
	In accordance with guidance produced by the UK Institute of Air Quality Management (IAQM) ¹⁴ an assessment of the effects of dust will normally only be required where an ecological receptor occurs within 50m boundary of the site or 50m of routes used by construction vehicles on public highways up to 500m from the site entrance. No designated wildlife sites are present within this radius.	
Changes in water quality (ground and surface waters)	<p>Surface water discharges and diffuse pollution from surface water run-off can contribute to a reduction in water quality through a net contribution of nutrients or contamination from a wide range of organic and inorganic compounds.</p> <p>Contamination of groundwater can occur through the direct recharge of groundwaters close to the ground surface or of deeper aquifers through percolation and other hydrological pathways that may affect surface waters where there is a potential ground and surface water hydraulic connectivity.</p>	<p>Potter’s River</p> <p>Common frog</p> <p>Smooth newt</p>

Potential Impacts and Interaction with Important Ecological Features (Operational Phase)

5.67 The sources of potential impacts arising from the proposed backfilling and restoration of the quarry at Ballinclare and the operation of the C&D recovery facility, and the relevant important ecological features which are likely, or have the potential to be directly or indirectly affected from any particular impact source based on the potential zone of influence of the development, in the absence of mitigation, are outlined in Table 5-10.

Table 5-10
Sources of Potential Impacts (Operational Phase)

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
Habitat loss, damage and fragmentation	<p>Habitat loss involves the direct destruction or physical take-up of vegetation, or the removal of other structures with conservation interest. Habitat loss may also occur indirectly as a result of a change in land-use or water management, for instance the drying-up of ponds or through induced successional events leading to a change in habitat type.</p> <p>Habitat fragmentation is concerned with spatial processes, such as negative edge effects (e.g. colonisation by ‘aggressive’ species or successional changes) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.</p> <p>Fragmented habitats are likely to be more vulnerable to external factors that may have a negative effect upon them; e.g. disturbance, and may be less resilient to change (including climate and management change) than connected habitats because colonising species may be unable to reach the habitat to re-colonise in the event of species loss.</p>	<p>FL8 – Other artificial lakes and ponds</p> <p>Bat assemblage</p> <p>Bird assemblage</p> <p>Common frog</p> <p>Smooth newt</p>

¹⁴ Holman et al (2014). *IAQM Guidance on the Assessment of Dust from Demolition and Construction*. Institute of Air Quality Management, London.

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
	<p>Habitat loss can have a direct impact on individual populations and assemblages of species result in the direct loss of individuals or populations of animal species, or indirectly by increasing levels of stress placed upon populations of some species through negative edge effects (e.g. predation pressure) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.</p> <p>The zone of influence of the proposed development is assessed to be restricted to the application site and immediate adjacent areas only.</p>	
<p>Disturbance from human activity, noise and vibration</p>	<p>Increases in disturbance, as a result of human activity can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.</p> <p>The response of individual species to increased levels of human disturbance will depend upon a number of factors including the sensitivity, reproductive status, previous exposure to human disturbance, behaviour during the event, species tolerance to disturbance, location in relation to the source, availability of alternative nearby habitat, and environmental factors (<i>i.e.</i> topography, vegetation and atmospheric conditions which can influence noise levels).</p> <p>The level of disturbance will also be dependent upon the existing ambient noise levels and maximum noise levels.</p> <p>Noise</p> <p>It is generally accepted that for noise, certain species or groups of species can be impacted upon up to a distance of up to 300m from its source for high level and discontinuous disturbance, with these distances reducing for low level and/or continuous disturbance levels.</p> <p>Evidence suggests that, in general, wildlife, with the exception of the most sensitive, will adjust and tolerate long-term increases in low-medium-level and continuous noises</p> <p>Guidance published under AQTAG09¹⁵ indicates that where noise levels are below 80dB L_{Amax} and 55dB $L_{Aeq,1hr}$ as measured at a nest site for birds or other feature used by wildlife it is considered unlikely that it will have an adverse impact on any such species.</p> <p>With regard to potential impacts from unmitigated noise associated with operational activities, the closest Natura 2000 site is Deputy's Pass SAC 1.6km away. A noise assessment of the potential acoustic impact of site activities at Deputy's Pass SAC undertaken for this EIAR indicated that resultant noise levels were considerably below the prescribed permitted limit of 55$L_{Aeq,1hr}$dB(A). The assessment concluded that the risks of significant noise impact at this location, or any more distant Natura 2000 site, was negligible given that the resultant ambient noise level was comparable to that of a rural area. The proposed site activities are almost certainly acoustically unnoticeable at Deputy's Pass SAC.</p>	<p>Bird assemblage</p>

¹⁵ Ormerod, L., Goodlad, N. and Horton, K. (2005) AQTAG09 – *Guidance on the Effects of Industrial Noise on Wildlife*. Air Quality Technical Advisory Group.

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
	<p><u>Visual Disturbance</u></p> <p>Visual disturbance from human activity can include the movement of people, machinery and plant and which can result in the disturbance of species by causing increased anxiety and flight due to perceived danger. The response to visual disturbance is highly variable between species, threat type and habituation to human contact and can typically range from 50m to 500m although for many species this is generally below 300m in open situations.</p>	
Dust deposition	<p>Traffic movements, the stockpiling and handling of waste materials, the movement and use of waste materials for the infilling of land and the separation of any construction and demolition waste and other associated works have the potential to generate dust.</p> <p>Literature suggests that the most sensitive species are affected by dust deposition at levels above 1000 mg/m²/day¹⁶ which is five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans.</p> <p>Where large amounts of dust are deposited on vegetation over a long time-scale (a full growing season for example) there may be some adverse effects upon plants restricting photosynthesis, respiration and transpiration. Furthermore, it can lead to phytotoxic gaseous pollutants penetrating the plants. The overall effect would be a decline in plant productivity, which may then have indirect effects on the quality of the surrounding habitats and associated fauna. The amounts of dust deposited and its effects are also dependent upon weather conditions, as in wet weather less dust will be generated and that which has been deposited upon foliage is likely to be washed off.</p> <p>In accordance with guidance produced by the UK Institute of Air Quality Management (IAQM)¹⁷ an assessment of the effects of dust will normally only be required where an ecological receptor occurs within 50m boundary of the site or 50m of routes used by construction vehicles on public highways up to 500m from the site entrance.</p>	<p>WN1 – Oak-birch-holly woodland</p> <p>GS4 Wet grassland</p>
Changes in water quality (ground and surface waters)	<p>Surface water discharges and diffuse pollution from surface water run-off can contribute to a reduction in water quality through a net contribution of nutrients, contamination from a wide range of organic and inorganic compounds, or suspended solids (silt etc.).</p> <p>Contamination of groundwater can occur through the direct recharge of groundwaters close to the ground surface or of deeper aquifers through percolation and other hydrological pathways that may affect surface waters where there is a potential ground and surface water hydraulic connectivity.</p>	<p>Potter’s River</p> <p>Common frog</p> <p>Smooth newt</p>

¹⁶ Farmer, A.M. (1993). *The Effects of Dust on Vegetation – A Review*. Environmental Pollution Vol.79, Issue 1, Pages 63-75.

¹⁷ Holman et al (2014). *IAQM Guidance on the Assessment of Dust from Demolition and Construction*. Institute of Air Quality Management, London.

- 5.68 In addition to the existing approved water treatment system, a number of potential leachate treatment and disposal options were considered for the proposed inert landfill and C&D waste recovery facilities at Ballinclare. Following a review of options, it was considered that the most suitable option for treatment of a leachate which principally requires reduction of inorganic substances would be an on-site (passive) wetland treatment system.
- 5.69 Based on the initial assessment and design, the proposed passive wetland treatment system at Ballinclare Quarry will comprise:
- (i) Leachate reception tank: up to 50m³, self-bunded storage tank with level controls.
 - (ii) Pump will be housed in a standard shipping container (6.0m x 2.4m x 2.6m) containing feed, discharge and chemical dosing pumps;
 - (iii) Passive wetland treatment system: comprising the following elements in series:
 - Anaerobic (biochemical reactor) wetland;
 - Iron Sequestering Unit (ISU);
 - Aerobic wetland.
 - (iv) Off-site discharge via existing ditch / drainage channel to Potters River.
- 5.70 Based on the assumption that the leachate flow rate is generated from a progressively capped inert landfill, the area of on-site wetland required at Ballinclare is to be of the order of 3.8 hectares. The water treatment wetland will significantly reduce the concentration of organic and inorganic compounds in the water discharged off-site, including the level of suspended solids. Further details can be found in Chapter 7, Water.
- 5.71 Dependent upon the plant species selected, the creation of the wetland habitat is considered likely to create new ecological niches and positively benefit biodiversity at a Local (higher) level. However, the creation of the wetland water treatment area will result in the removal of seven of the pre-existing settlement lagoons which support a population of common frog and smooth newt.

Potential Impacts and Interaction with Important Ecological Features (Post-Operational Phase)

- 5.72 Ballinclare Quarry will be returned to grassland / natural scrub habitat on completion of landfilling and restoration activities and cessation of waste recovery activities. The restored landform will be sown with a grassland seed-mix with some hedgerow planting to re-establish former field boundaries.
- 5.73 No sources of potential significant adverse impacts are considered likely on important ecological features over and above those arising during the construction and operational phases of the proposed development. The ultimate restoration of the quarry (and the extended site) is likely to have a positive and beneficial effect on wildlife as opposed to the landfilling and C&D waste recovery activities during the operational phase.
- 5.74 The level and significance of any post-operational effects cannot be quantified at this current time for any individual or groups of species but are likely to be beneficial and positive at a Local (lower) value. As the effects from the restoration are considered likely to be generally positive, no further assessment is deemed necessary in respect of the post-operational phase.

Assessment of Effects and Mitigation Measures

- 5.75 Table 5-11 overleaf details the assessment of predicted effects on the identified and relevant important ecological features from the proposed development of an inert landfill and C&D waste recovery facility at Ballinclare Quarry and mitigation measures to prevent, reduce or offset any potential effects.

Table 5-11
Assessment of Effects on Identified and Relevant Important Ecological Features

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
FL8 – Other Artificial Lakes and Ponds		
Habitat loss, damage and fragmentation	<p>Assessment of Effects:</p> <p>The creation of the water treatment wetland will result in the removal of seven of the existing water settlement lagoons that support populations of smooth newts and common frog. However, the semi-natural waterbodies are outside the wetland development footprint and should not be negatively impacted.</p> <p>Construction of the C&D waste recovery facilities will be on existing artificially surfaced areas and will have no significant impacts regarding habitat loss, damage or fragmentation.</p>	Before mitigation: Local (higher) level impact
	<p>Mitigation:</p> <p>Translocation of the amphibian populations to suitable already existing onsite habitat that will not be impacted by the construction process. The creation of the wetland habitats for the water treatment process will produce high quality foraging habitat for amphibians and some areas of standing water that could potentially be utilised.</p>	After mitigation: not significant.
WN1 – Oak-Birch-Holly Woodland		
Habitat loss, damage and fragmentation	<p>Assessment of Effects:</p> <p>The construction and operation of inert C&D waste and aggregate recovery facilities, the creation of the wetland, and the backfilling of the quarry void will not result in any direct loss, damage or fragmentation of any <i>WN1 – Oak-birch-holly woodland</i>.</p>	Not significant
	<p>Mitigation:</p> <p>No specific ecological mitigation is required as impact is assessed as not significant.</p>	
Dust deposition	<p>Assessment of Effects:</p> <p>The predicted dust emission magnitude based on the scale of potential earthworks / landfilling activities and waste recovery operations at any one time is assessed as likely to be of large potential dust emission magnitude. It is also likely to be large for trackout of large magnitude (based on 90 HDV outward movements / day), based on guidance produced by the IAQM.</p>	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	<p><i>WN1 – Oak-birch-holly woodland</i> is assessed as being a receptor of low sensitivity to dust. At a distance of 20m at the closest point of the operation of the inert waste recovery facility, it is assessed that there is a low risk from the deposition of dust on this woodland.</p> <p>Dust monitoring carried out as part of former mineral extraction operations recorded dust deposition levels below 350mg/m²/day. Deposition levels were generally in compliance with the limit values set in the DoEHLG and EPA guidelines for the quarrying sector (Section 8 Air Quality of the EIAR).</p> <p>Dust deposition from the operation of the inert waste facility is predicted to be at similar level to those generated during past quarrying and associated valued added operations and will not be at levels or will be of a reactive nature where there will be any significant impact the <i>WN1 – Oak-birch-holly woodland</i> and its associated flora.</p> <p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	
GS4 – Wet Grassland		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The construction of the water treatment wetland will result direct loss, damage and fragmentation of part of the <i>GS4 – Wet grassland</i> habitat at the application site during the construction phase.</p> <p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	Not significant
Dust deposition	<p>Assessment of Effects: Construction of the water treatment wetland will effectively remove and replace the <i>GS4 Wet grassland</i> habitat present and replace it with wetland habitats of higher intrinsic nature conservation importance. Dust deposition from the construction and operation of the inert waste facility is predicted to be at similar level to that generated during quarrying and associated value added operations and will not be at levels where there will be any anticipated significant impact on vegetated habitats.</p> <p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	Not significant/ not applicable

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Potter's River		
<p>Changes in water quality (ground and surface waters)</p>	<p>Assessment of Effects:</p> <p>The Potter's River is assessed as being of 'moderate' quality status up and downstream of the proposed discharge point from the Ballinclare Quarry under the Water Framework Directive (WFD) (2010-2015), but improves to 'good' at Kilboy Bridge on the L5159 local road and remains 'good' until it outflows into the sea.</p> <p>The Environmental Protection Agency's (EPA) latest assessment of water quality for the Potter's River shows it has a Q-rating of Q3-4 (Moderate) (2015) downstream of Ballinclare Quarry at Kilboy Bridge but which improves downstream to Q4 (good) at Kilbride Bridge (1990) and Castletimon Bridge (2015). Consultation response received from Inland Fisheries Ireland indicated that the 2018 EPA biological monitoring recorded at EPA site 0300 at Kilboy Bridge reported that the macroinvertebrate fauna was unsatisfactory and excessive siltation was also recorded.</p> <p>Analysis of water quality in the Potter's River indicates that mercury concentrations are in exceedance of EQS values for surface waters. An assessment of Assimilative Capacity (AC) and Mass Balance (MB) shows that the Potter's River has the AC to receive the discharge from Ballinclare Quarry without having any adverse effects on water quality in this watercourse (refer to Chapter 7 Water) with the discharge having a positive effect in respect to mercury as the levels of mercury in the water being discharged will be lower than those recorded in the Potter's River.</p> <p>The water treatment wetland will significantly reduce a range of potential pollutants in the groundwater and surface water being discharged from the application site, including a significant reduction in suspended solids that could lead to siltation. No increase in the level of suspended solids is anticipated within the Potter's River as a consequence of the development proposals.</p> <p>The application site lies above the Wicklow Groundwater Body (GWB) that is assessed under the Water Framework Directive (WFD) as being of 'good' quality status. It is understood that connection to the groundwater table is poor (refer to Chapter 7 Water) and the operations are therefore considered highly unlikely to have a significant impact on the ground water body.</p> <p>Mitigation:</p> <p>No specific ecological mitigation is required as impact is assessed as not significant.</p>	<p>Not significant (minor positive)</p>

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Bat Assemblage		
Habitat loss, damage and fragmentation	<p>Assessment of Effects:</p> <p>The construction and operation of the inert waste management facility and the ongoing landfill and recovery activities at the quarry will not result in the loss of any known feature used by bats or with potential to support roosting bats.</p> <p>The damage and disturbance of the existing low quality foraging habitat within the application site during the operation of the inert waste facility is not likely to result in the loss of any species of bat given the availability of higher quality habitats throughout the wider surrounding area.</p> <p>The operation of the inert waste facility and ongoing landfill activities at the quarry is not likely to result in the loss of critical or important foraging habitat or cause any fragmentation of commuting habitat within the CSZ for bats where roosts, identified in the wider surrounding area, will be affected.</p> <p>The construction of the 3.8 hectare water treatment wetland will result in the establishment of a significant area of high quality bat foraging territory, with the potential to benefit local bat populations.</p> <p>Mitigation:</p> <p>No specific ecological mitigation is required as impact is assessed as not significant. A minor positive residual impact is anticipated as a result of the creation of a large area of high quality foraging habitat for bats, due to the creation of the water treatment wetland.</p>	Not significant (minor positive)
Bird Assemblage		
Habitat loss, damage and fragmentation	<p>Assessment of Effects:</p> <p>In the absence of mitigation, there would be adverse impact upon the assemblage of birds identified as being of Local (lower) value through the loss of existing habitats and its associated features with the potential to be used by breeding birds. However, based on the assemblage of birds recorded and the numbers likely to use the application site it is considered that any impact would be imperceptible on the population status of any individual species as a direct or indirect result of the proposed activities at this site.</p>	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	<p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant. However, mitigation measures required to ensure compliance with Wildlife Act 1976 (as amended) prohibiting the killing, injuring or taking; the damage, destruction or taking of nests in use or being built; and the taking or destruction of eggs, where any nest sites are found to be present in the quarry faces / exposures during landfilling operations.</p>	
<p>Disturbance from human activity, noise and vibration</p>	<p>Assessment of Effects: It is recognised that assessing the impacts of disturbance to birds is difficult and that there are no environmental standards that can be applied for birds, unlike human beings. There has been a wide range of studies into disturbance and its consequences for birds but the responses by individual and groups of birds is complex and can be dependent upon a number of environmental variables as well as between individual sites. However, it is generally accepted that noises of 70 dB (likely disturbance threshold for many bird species), or greater, can have an impact on bird species at a distance of up to 300m from its source for high level and discontinuous disturbance. Certain species of birds are likely to be more vulnerable to noise and visual disturbance than others. Analysis of the responses of certain bird species to disturbance has found that passive, low-level and continuous disturbance is likely to lead to habituation by birds to such disturbance, whereas active, high level and discontinuous disturbance is likely to lead to the displacement of some bird species from the disturbed area, except for only the very tolerant species¹⁸. The noise assessment predicts that noise levels are likely to be similar to the quarrying and associated operations previously carried out at this site and any birds present are likely to have been somewhat habituated to a certain degree of noise and visual disturbance (refer also to Chapter 10 Noise of the EIAR). Whilst some displacement may occur up to 50m from the source of any noise it is considered that this is highly unlikely to have a significant effect on the overall population status of any such species within the wider surrounding area given that none of the bird species recorded at the site are considered to be particularly sensitive to noise and/or visual disturbance.</p> <p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	<p>Not significant</p>

¹⁸ Hockin, D., Ounsted, M., Gorman, M., Hill, D., Keller, V. And Barker, M.A. (1992). *Examination of the Effects of Disturbance on Birds with Reference to its Importance in Ecological Assessments*. Journal of Environmental Management Vol 36 pp 253-286.

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Smooth Newt		
Habitat loss, damage and fragmentation	<p>Assessment of Effects:</p> <p>The construction of the water treatment wetland will result in the removal of seven of the existing water settlement lagoons that support populations of smooth newts, although the semi-natural waterbodies will be retained. Upon establishment, the water treatment wetland will create a large area of high-quality foraging habitat exploitable by the site's population of amphibians.</p>	Before mitigation: County level negative impact
	<p>Mitigation:</p> <p>Translocation of the smooth newt population to the suitable already existing on-site wetland habitats. Creation of two additional permanent bodies of standing water and their establishment and planting as amphibian breeding ponds to replace the water settlement lagoons removed during construction of the wetland will also mitigate the impacts of breeding habitat loss. The water treatment wetland is to be created in two sections, to permit maintenance and management. One amphibian pond should be created in association with each section of the wetland. The ponds should each have a surface area of at least 150m², with shallow sloping edges to encourage emergent vegetation, and a deeper area that will remain permanently wet and discourage colonisation by reeds or reedmace (approximately 1m to 1.5m deep).</p>	After mitigation: Not significant
Common Frog		
Habitat loss, damage and fragmentation	<p>Assessment of Effects:</p> <p>The construction of the water treatment wetland will result in the removal of seven of the existing water settlement lagoons that support populations of common frog, although the semi-natural waterbodies will be retained. Upon establishment, the water treatment wetland will create a large area of high-quality foraging habitat exploitable by the site's population of amphibians.</p>	Before mitigation: Local (lower) negative impact
	<p>Mitigation</p> <p>Translocation of the common frog population to suitable already existing on-site wetland habitats. Creation of two additional permanent bodies of standing water and their establishment and planting as amphibian breeding ponds to replace the water settlement lagoons removed during construction of the wetland will also mitigate the impacts of breeding habitat loss.</p>	After mitigation: Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	<p>The water treatment wetland is to be created in two sections, to permit maintenance and management. One amphibian pond should be created in association with each section of the wetland. The ponds should each have a surface area of at least 150m², with shallow sloping edges to encourage emergent vegetation, and deeper area that will remain permanently wet and discourage colonisation by reeds or reedmace (approximately 1m to 1.5m deep).</p>	

Ecosystem Services

- 5.74 The application site at this current time is not considered to provide any ecosystem services including supporting, provisioning, regulating and/or cultural services.

Cumulative Impacts

- 5.75 There are no other known planning applications, activities or proposed activities at, or within close proximity to the application site (up to a radius of 5km) that would be likely to result in any significant cumulative impacts on important ecological features, or on the biodiversity of the local area at this current time. It is, therefore, considered that no significant cumulative ecological impacts would occur.

RESIDUAL IMPACTS

- 5.76 It is assessed that the proposed development at Ballinclare Quarry will not have a significant adverse impact on the overall biodiversity resource at a local or county level, and may have a positive impact at the local level dependent on the construction and plant species selection for the water-treatment wetland. This should ideally comprise native wetland species of local provenance.
- 5.77 Taking into account the above, the proposed development of an inert waste management facility for the backfilling and restoration of Ballinclare Quarry is not predicted to have any significant residual negative impacts and may have minor positive impacts for biodiversity at the local level.

Ecological Enhancement And Compensation

- 5.78 Based on the assessment of effects and through the consideration of mitigation incorporated into the scheme where appropriate, it is concluded that all reasonable and practicable steps have been taken to avoid significant adverse effects on important features from the proposed development of an inert waste landfill, water treatment wetland, and C&D recovery facilities at Ballinclare Quarry.
- 5.79 Therefore, no further recommendations for ecological enhancement and/or compensation are deemed necessary as part of the proposed development, or to ensure the compliance with wildlife legislation, over and above the restoration and mitigation proposals.

Legal Implications

- 5.80 The proposed scheme has no implications for any statutory designated nature conservation sites.
- 5.81 The only statutory protected species with relevance to the proposed development of an inert waste landfill and C&D waste recovery facility at Ballinclare Quarry are breeding birds, common frog and smooth newt.
- 5.82 Through the provision of appropriate mitigation strategies for breeding birds it will be possible for the development to be carried out without the risk of breaching current wildlife legislation.
- 5.83 Through habitat creation for and translocation of the common frog and smooth newt to facilitate development of the wetland water treatment facility there will be no legal implications for any protected species.

Policy Implications

- 5.84 Provided that all appropriate mitigation measures to ensure compliance with the Wildlife Act 1976 (as amended) in respect to breeding birds, common frog and smooth newt, it is considered that the proposed development will comply with the requirements of current national and local planning policies relating to biodiversity.

MONITORING

- 5.85 No specific ecological monitoring is deemed necessary as part of the proposed development of the inert landfill / C&D waste facilities at Ballinclare Quarry.
- 5.86 The creation of the wetland water treatment area will result in the removal of the existing water treatment lagoons. The construction of two dedicated amphibian breeding ponds has been proposed during the wetland creation works, and it is recommended that the establishment of these is monitored. It is recommended that an annual inspection of the ponds is conducted for a period of ten years, with remedial actions such as replacement planting or vegetation clearance being undertaken as necessary.

CONCLUSIONS

- 5.87 SLR Consulting Ireland conducted an Ecological Impact Assessment to inform the wider Environmental Impact Assessment process and production of an Environmental Impact Assessment Report to accompany the planning application by Kilsaran Concrete for the proposed development of an inert waste management facility, comprising an inert landfill and C&D waste / aggregate recovery facilities and water treatment wetland at Ballinclare Quarry, in the townlands of Ballinclare and Carrigmore, near Kilbride, Co. Wicklow.
- 5.88 The application site, covering circa 32.5 hectares (ha), comprises a former quarry used for the extraction of diorite with an extraction void of 17.2ha that has been worked to 22m above Ordnance Datum (AOD) as well as a former concrete / asphalt production area, a concrete block yard, established site buildings and infrastructure and a water management system comprising a series of attenuation and settling ponds.
- 5.89 The application site is not subject to any statutory designation and no such site will be directly or indirectly impacted upon by the proposed inert waste management facility.
- 5.90 The proposed development will not have any impacts of any Habitats Directive listed Annex I habitats or on Annex II species.
- 5.91 The proposed development will result in the direct loss, damage and disturbance of 17.2ha of habitat that is comprised of ED4 – Active quarries and mines habitat with the sub-habitat types of ED1 – Exposed sand, gravel or till, ED3 – Recolonising bare ground that in places shows transition to GS2 – Dry meadows and grassy verges habitat and FL8 - Other artificial lake and ponds; GA1 – Agricultural grassland, and GS4 – Wet grassland.
- 5.92 Through the provision of appropriate mitigation to ensure the protection of potential breeding birds and the habitat creation for and translocation of the common frog and smooth newt during the construction of the proposed wetland water treatment facility and any landfilling and restoration operations, there will be no legal implications for any protected species.
- 5.93 Provided that all appropriate mitigation measures are implemented to ensure compliance with the Wildlife Act 1976 (as amended) in respect to breeding birds, common frog and smooth newt, it is considered that the proposed development of an inert waste management facility at Ballinclare Quarry will comply with the requirements of current national and local planning policies relating to biodiversity.
- 5.94 The proposed restoration of the quarry following its backfilling and final restoration is likely to have a positive and beneficial effect on wildlife and on local biodiversity up to Local (higher) value from current baseline conditions, particularly with regard to the creation of a large area of wetland habitat.

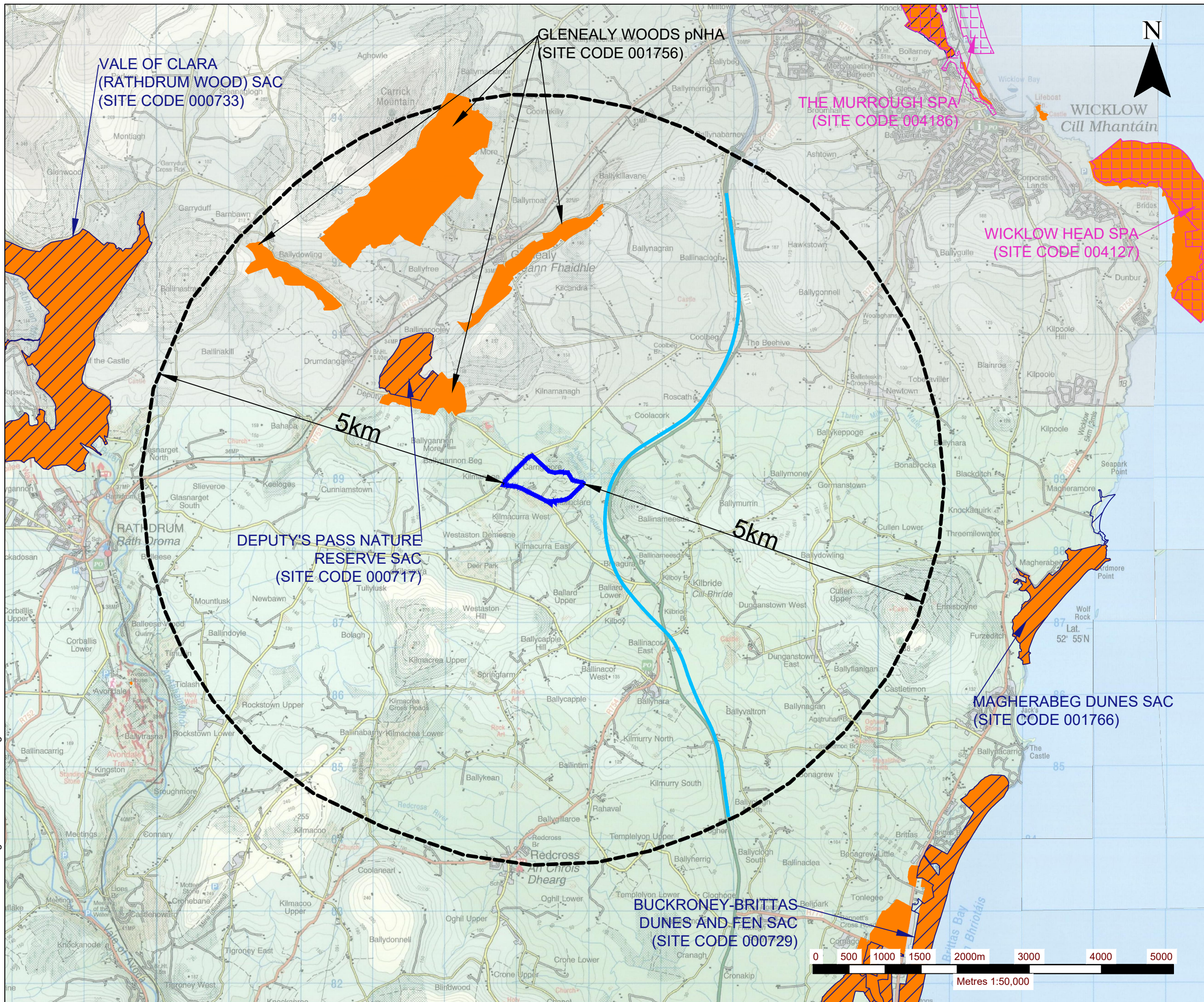
- 5.95 It is assessed that the proposed development will not have a significant adverse impact on the overall biodiversity resource at a local or county level, and may have a positive impact at the local level dependent on the construction and plant species-selection of the water-treatment wetland.
- 5.96 Taking into account the above, the proposed development of an inert waste management facility and the ultimate long-term restoration of Ballinclare Quarry is not predicted to have any significant residual negative impacts and may have minor positive impacts for biodiversity at the local level.

FIGURES

**Figure 5-1
Designated Sites**

**Figure 5-2
Habitat Plan**

00036.00080.0.16.FIG 5-1.0.Designated Site Location.dwg



NOTES

1. EXTRACT FROM ORDNANCE SURVEY 1:50,000 DISCOVERY SERIES MAPPING SHEET NO. 56 & 92
2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY IRELAND/ GOVERNMENT OF IRELAND

LEGEND

	LANDHOLDING BOUNDARY (c.36 Ha. / 89 acres)
	5KM RADIUS FROM LAND INTEREST BOUNDARY
	002274 - DEPUTY'S PASS NATURE RESERVE SAC
	001756 - GLENEALY WOODS pNHA

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

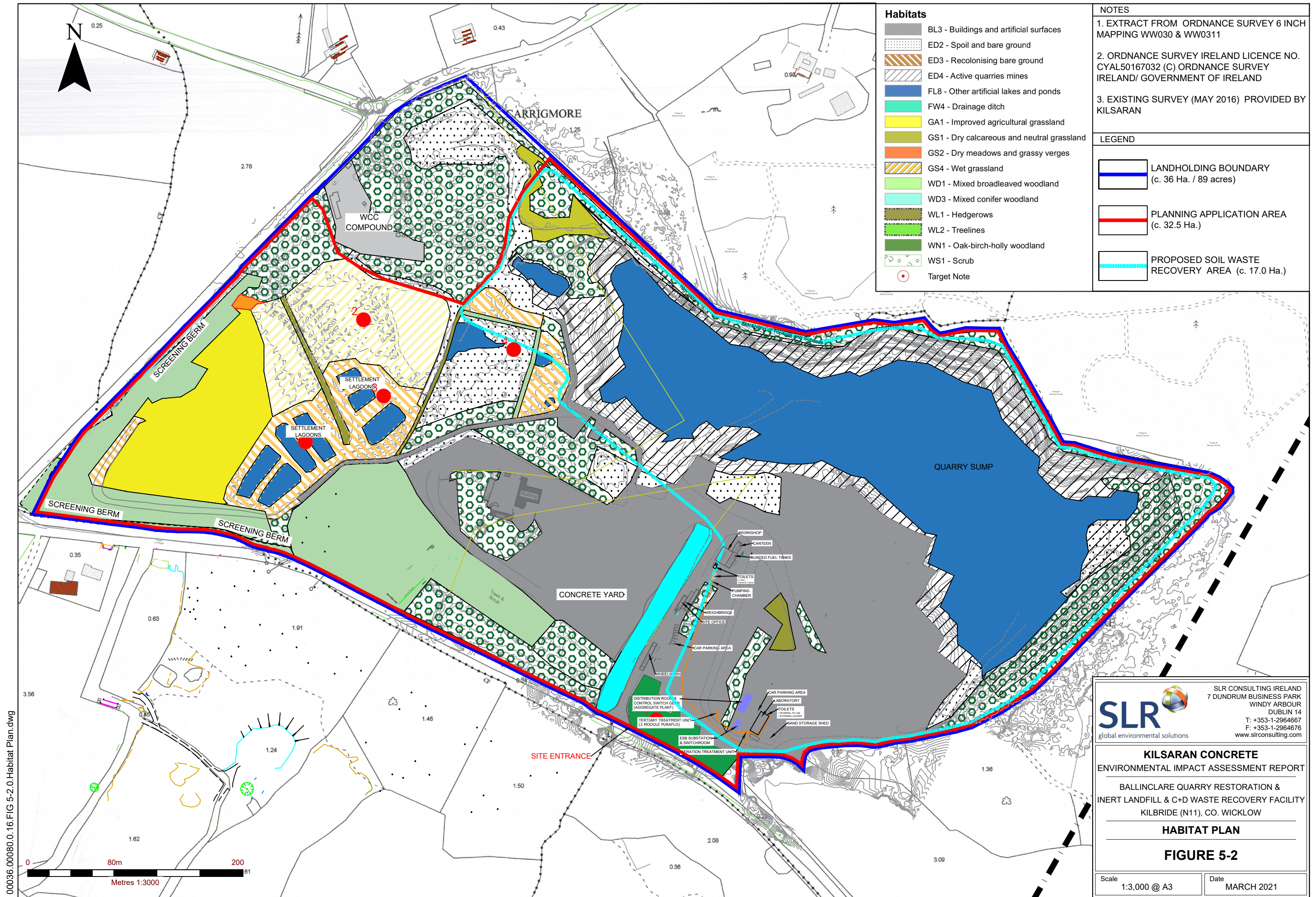
KILSARAN CONCRETE
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

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

DESIGNATED SITES

FIGURE 5-1

Scale: 1:50,000 @ A3 Date: MARCH 2021



Habitats

[Grey Box]	BL3 - Buildings and artificial surfaces
[Dotted Box]	ED2 - Spoil and bare ground
[Diagonal Lines Box]	ED3 - Recolonising bare ground
[Cross-hatched Box]	ED4 - Active quarries mines
[Blue Box]	FL8 - Other artificial lakes and ponds
[Green Box]	FW4 - Drainage ditch
[Yellow Box]	GA1 - Improved agricultural grassland
[Light Green Box]	GS1 - Dry calcareous and neutral grassland
[Orange Box]	GS2 - Dry meadows and grassy verges
[Diagonal Lines Box]	GS4 - Wet grassland
[Light Green Box]	WD1 - Mixed broadleaved woodland
[Light Blue Box]	WD3 - Mixed conifer woodland
[Dark Green Box]	WL1 - Hedgerows
[Green Box]	WL2 - Treelines
[Dark Green Box]	WN1 - Oak-birch-holly woodland
[Green Box]	WS1 - Scrub
[Red Circle]	Target Note

NOTES

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

LEGEND

[Blue Line]	LANDHOLDING BOUNDARY (c. 36 Ha. / 89 acres)
[Red Line]	PLANNING APPLICATION AREA (c. 32.5 Ha.)
[Cyan Line]	PROPOSED SOIL WASTE RECOVERY AREA (c. 17.0 Ha.)

00036.00080.0.16.FIG 5-2.0.Habitat Plan.dwg

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 LANDFILL & C+D WASTE RECOVERY FACILITY
KILBRIDE (N11), CO. WICKLOW

HABITAT PLAN

FIGURE 5-2

Scale 1:3,000 @ A3 Date MARCH 2021

APPENDICES

Appendix 5-A

Relevant Legislation and Local Planning Policy

Appendix 5-B

Summary of Birds Recorded During Habitat Survey (May 2019)

APPENDIX 5-A
RELEVANT LEGISLATION AND LOCAL PLANNING POLICY

Relevant Legislation

EIA Directive

The EIA Directive, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC of 3 March 1997, Directive 2003/35/EC of 26 May 2003 and Directive 2009/31/EC of 23 April 2009, now codified in Directive 2011/92/EU of 13 December 2011 and amended in Directive 2014/52/EU of 16 April 2014, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given. The EIA Directive was first transposed into Irish law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349 of 1989) which amended the Local Government (Planning and Development) Act, 1963 (and other legislation) to provide for environmental impact assessment.

Habitats and Birds Directive

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An 'appropriate assessment' is an evaluation of the potential impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

National Legislation

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2018 and the Floral (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that '*Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made*'.

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.

Local Planning Policy

Wicklow County Development Plan 2016-2022

The relevant planning policies in respect of natural heritage, woodlands, water systems, soils and geology and green infrastructure have been reproduced below from Volume 1 of the Wicklow County Development Plan 2016 – 2020 (Chapter 10 : Heritage).

Policy	Description
NH1	To ensure that the impact of new developments on biodiversity is minimised and to require measures for the protection and enhancement of biodiversity in all proposals for large developments.
NH2	No projects giving rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this plan (either individually or in combination with other plans or projects).
NH3	<p>To contribute, as appropriate, towards the protection of designated ecological sites including candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs); Wildlife Sites (including proposed Natural Heritage Areas); Salmonid Waters; Flora Protection Order sites; Wildfowl Sanctuaries (see S.I. 192 of 1979); Freshwater Pearl Mussel catchments; and Tree Preservation Orders (TPOs). To contribute towards compliance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines, including the following and any updated/superseding documents:</p> <ul style="list-style-type: none"> • EU Directives, including the Habitats Directive (92/43/EEC, as amended), the Birds Directive (2009/147/EC), the Environmental Liability Directive (2004/35/EC), the Environmental Impact Assessment Directive (85/337/EEC, as amended), the Water Framework Directive (2000/60/EC) and the Strategic Environmental Assessment Directive (2001/42/EC). • National legislation, including the Wildlife Act 1976, the European Communities (Environmental Impact Assessment) Regulations 1989 (SI No. 349 of 1989) (as amended), the Wildlife (Amendment) Act 2000, the European Union (Water Policy) Regulations 2003 (as amended), the Planning and Development Act 2000 (as amended), the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477 of 2011) and the European Communities (Environmental Liability) Regulations 2008. • National policy guidelines (including any clarifying Circulars or superseding versions of same), including the Landscape and Landscape Assessment Draft Guidelines 2000, the Environmental Impact Assessment Sub-Threshold Development Guidelines 2003, Strategic Environmental Assessment Guidelines 2004 and the Appropriate Assessment Guidance 2010. • Catchment and water resource management Plans, including Eastern and South Eastern River Basin Management Plan 2009-2015 (including any superseding versions of same). • Biodiversity Plans and guidelines, including Actions for Biodiversity 2011-2016: Ireland's 2nd • National Biodiversity Plan (including any superseding version of same). • Ireland's Environment 2014 (EPA, 2014, including any superseding versions of same), and to make provision where appropriate to address the report's goals and challenges.

Policy	Description
NH4	<p>All projects and plans arising from this plan (including any associated improvement works or associated infrastructure) will be screened for the need to undertake Appropriate Assessment under Article 6 of the Habitats Directive. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:</p> <ol style="list-style-type: none"> 1) The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or 2) The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type and / or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or 3) The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.
NH5	To maintain the conservation value of all proposed and future Natural Heritage Areas (NHAs) and to protect other designated ecological sites in Wicklow.
NH6	Ensure ecological impact assessment is carried out for any proposed development likely to have a significant impact on proposed Natural Heritage Areas (pNHAs), Natural Heritage Areas (NHAs), Statutory Nature Reserves, Refuges for Fauna, Annex I habitats, or rare and threatened species including those species protected by law and their habitats. Ensure appropriate avoidance and mitigation measures are incorporated into development proposals as part of any ecological impact assessment.
NH7	The Council recognises the natural heritage and amenity value of the Wicklow Mountains National Park and shall consult at all times with National Park management regarding any developments likely to impact upon the conservation value of the park, or on issues regarding visitor areas.
NH8	To protect non-designated sites from inappropriate development, ensuring that ecological impact assessment is carried out for any proposed development likely to have a significant impact on locally important natural habitats or wildlife corridors. Ensure appropriate avoidance and mitigation measures are incorporated into development proposals as part of any ecological impact assessment.
NH9	To support, as appropriate, relevant public bodies (such as the National Parks and Wildlife Service), efforts to seek to control and manage alien / invasive species within the County.
NH10	To facilitate, in co-operation with the relevant statutory authorities and other groups, the identification of valuable or vulnerable habitats of local or regional importance, not otherwise protected by legislation.
NH11	To support the Department of the Arts, Heritage, Regional, Rural and Gaeltacht Affairs and the National Parks and Wildlife Service in the development of site specific conservation objectives (SSCOs).

Policy	Description
NH12	To support the protection and enhancement of biodiversity and ecological connectivity within the plan area in accordance with Article 10 of the Habitats Directive, including linear landscape features like watercourses (rivers, streams, canals, ponds, drainage channels, etc), woodlands, trees, hedgerows, road and railway margins, semi-natural grasslands, natural springs, wetlands, stonewalls, geological and geo-morphological systems, features which act as stepping stones, such as marshes and woodlands, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones that taken as a whole help to improve the coherence of the Natura 2000 network in Wicklow.
NH13	To preserve lands at 'The Rocks', Kilcoole in its existing state; to allow no development of these lands; to protect the lands as a natural habitat and biodiversity area; to protect the open nature and landscape quality of the lands.
NH14	To promote the preservation of trees, groups of trees or woodlands in particular native tree species, and those trees associated with demesne planting, in the interest of amenity or the environmental, as set out in Schedule 10.08 and Map 10.08 A, B & C of this plan.
NH15	To consider the making of Tree Preservation Orders (TPOs) to protect trees and woodlands of high value, where it appears that they are in danger of being felled.
NH16	Development that requires the felling of mature trees of environmental and/or amenity value, even though they may not have a TPO in place, will be discouraged.
NH17	To discourage the felling of mature trees to facilitate development and encourage tree surgery rather than felling where possible.
NH18	To encourage the preservation and enhancement of native and semi-natural woodlands, groups of trees and individual trees, as part of the development management process, and require the planting of native, and appropriate local characteristic species, in all new developments.
NH19	To encourage the retention, wherever possible, of hedgerows and other distinctive boundary treatment in the County. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, provision of the same type of boundary will be required of similar length and set back within the site in advance of the commencement of construction works on the site (unless otherwise agreed by the Planning Authority).
NH20	To facilitate the implementation of the <i>EU Water Framework Directive</i> and associated River Basin and Sub-Basin Management Plans and the <i>EU Groundwater Directive</i> to ensure the protection, improvement and sustainable use of all waters in the County, including rivers, lakes, ground water, coastal and estuarine waters, and to restrict development likely to lead to a deterioration in water quality.
NH21	To resist development that would interfere with the natural water cycle to a degree that would interfere with the survival and stability of natural habitats.
NH22	To prevent development that would pollute water bodies and in particular, to regulate the installation of effluent disposal systems in the vicinity of water bodies that provide drinking water or development that would exacerbate existing underlying water contamination.
NH23	To minimise alterations or interference with river / stream beds, banks and channels, except for reasons of overriding public health and safety (e.g. to reduce risk of flooding); a buffer of generally 10m along watercourses should be provided (or other width, as determined by the Planning Authority) free from inappropriate development, with undeveloped riparian vegetation strips, wetlands and floodplains generally being retained in as natural a state as possible. In all cases where works are being carried out, to have regard to Regional Fisheries Board " <i>Requirements for the protection of fisheries habitat during the construction and development works at river sites</i> ".

Policy	Description
NH31	To recognise the importance and contribution of Green Infrastructure throughout the region for the maintenance of biodiversity and ensuring that the region will be able to, or be ecologically robust enough to, adapt and respond to climate change issues.
NH32	To protect existing green infrastructure resources and to facilitate, in consultation with relevant stakeholders, the development of green infrastructure that recognises the benefits that can be achieved with regard to the following: <ul style="list-style-type: none"> • Provision of open space amenities, • sustainable management of water, • protection and management of biodiversity, • protection of cultural heritage, and • protection of protected landscape sensitivities.
NH34	New development and redevelopment proposals, where considered appropriate, are required to contribute towards the protection, management and enhancement of the existing green infrastructure of the local area in terms of the design, layout and landscaping of development proposals.
NH35	To facilitate the development and enhancement of suitable access to and connectivity between areas of interest for residents, wildlife and biodiversity, with focus on promoting river corridors, Natura 2000 sites, nature reserves and other distinctive landscapes as focal features for linkages between natural, semi natural and formalised green spaces where feasible and ensuring that there is no adverse impact (directly, indirectly or cumulatively) on the conservation objectives of Natura 2000 sites.
NH36	To identify and facilitate the provision of linkages along and between river corridors within the county and adjoining counties to create inter connected routes and develop riverside parks and create linkages between them to form 'necklace' effect routes including development of walkways, cycleways and wildlife corridors where feasible and ensuring that there is no adverse impact (directly, indirectly or cumulatively) on the conservation objectives of Natura 2000 sites.
NH38	To facilitate the development of green bridges / wildlife crossings over existing physical transport barriers to repair fragmentation of the green infrastructure network caused by such grey infrastructure developments.

APPENDIX 5-B
SUMMARY OF BIRDS RECORDED DURING HABITAT SURVEY (MAY 2019)

Scientific Name	Common Name	Annex I EU Birds Directive	Red List	Amber List
<i>Anas platyrhynchos</i>	Mallard	-	-	-
<i>Columba palumbus</i>	Woodpigeon	-	-	-
<i>Corvus corone cornix</i>	Hooded Crow	-	-	-
<i>Corvus frugilegus</i>	Rook	-	-	-
<i>Corvus mondeuls</i>	Jackdaw	-	-	-
<i>Corvus monedula</i>	Jackdaw	-	-	-
<i>Cyanistes caeruleus</i>	Blue Tit	-	-	-
<i>Erithacus rubecula</i>	Robin	-	-	✓
<i>Falco peregrinus</i>	Peregrine	✓	-	-
<i>Fringilla coelebs</i>	Chaffinch	-	-	-
<i>Gallinula chloropus</i>	Moorhen	-	-	-
<i>Garrulus glandarius</i>	Jay	-	-	-
<i>Hirundo rustica</i>	Swallow	-	-	✓
<i>Motacilla alba</i>	Pied Wagtail	-	-	-
<i>Parus major</i>	Great tit	-	-	-
<i>Sternus vulgaris</i>	Starling	-	-	✓
<i>Troglodytes</i>	Wren	-	-	-
<i>Tudus viscivorus</i>	Mistle Thrush	-	-	✓
<i>Turdus merula</i>	Blackbird	-	-	-