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INTRODUCTION

Background

- 4.1 The restoration scheme for the entire quarry complex at Huntstown, at the North Road in Finglas, Dublin 11, which comprises backfilling of 4 separate quarry voids using imported soil and stone waste was granted planning permission in 2014 (Fingal County Council Ref. FW12-0022 and An Bord Pleanála (ABP) Ref. 241693). A separate EPA waste licence (Ref. W0277-01) in respect of ongoing backfilling and waste recovery activities at the North Quarry was issued in February 2015. The existing planning and waste consents currently limit waste intake to 750,000 tonnes per annum.
- 4.2 This chapter provides an Ecological Impact Assessment (EclA) on the likely significant impacts on designated sites, habitats and species arising from the proposed increase in the permitted waste intake for backfilling and recovery purposes to the North Quarry and West Quarry (hereinafter referred to as the 'application site') from a maximum of 750,000 tonnes per annum at present to 1,500,000 tonnes per annum in future years.

Location and Setting

- 4.3 Huntstown Quarry is a large operational quarry that lies in the townlands of Cappoge, Grange, Johnstown, Kilshane and part of Huntstown approximately 6km west of Dublin Airport. The quarry comprises four main extraction areas (i.e. North Quarry, Central Quarry, South Quarry and West Quarry) within a total landholding of 200.3 hectares (483 acres).
- 4.4 The application site covers 48.6ha of land within the townlands of Part of Huntstown, Kilshane and Johnstown. It encompasses: the North Quarry along with associated perimeter screening and overburden mounds; the West Quarry that was stripped of topsoils and overburden but which was never subsequently quarried; and existing ancillary site infrastructure (offices, sheds, hardstand areas, wheelwash, weighbridges, settlement ponds etc.), much of which is shared as part of the wider operations carried out Huntstown Quarry.
- 4.5 The surrounding land-use is a mixture of urban and commercial development with associated infrastructure including the M50, Dublin Airport and agricultural land and is a landscape typical of a rural-urban fringe.

Purpose of the Ecological Impact Assessment

- 4.6 The EclA presented in this section of the Environmental Statement can be considered as having three main purposes:
- to provide an objective and transparent assessment of the ecological effects of the development proposal;
 - to permit objective and transparent determination of the consequences of the proposal in terms of national, regional and local policies relevant to nature conservation; and
 - to demonstrate that the proposal will meet the legal requirements relating to habitats and species.

- 4.7 This EclA has been undertaken in accordance with guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹ ‘*the CIEEM EclA Guidelines*’, and the Environmental Protection Agency’s (EPA) guidelines for carrying out Environmental Impact Statements^{2 3}. It follows a standard approach based upon the description of the existing baseline conditions within the application site; an evaluation of ecological features present within the application site; the identification of potential ecological effects from the proposed intensification of waste intake; and an assessment of the likely significance of identified impacts on important ecological features.
- 4.8 Where a negative impact has been identified, suitable mitigation measures to prevent, reduce or offset the level of impact are provided. Any residual effects, following the implementation of mitigation and enhancement measures, are then identified and assessed with significant effects clearly described. It is not necessarily the purpose of an EclA to mitigate significant ecological effects, but to identify these effects such that they can be fully considered in the decision-making process. Where appropriate, this assessment also sets out the details of implementation measures for proposed mitigation and any requirements for ecological monitoring, maintenance or management.
- 4.9 The assessment considers the likelihood of any cumulative effects, i.e. those resulting from the proposed development and other plans or projects.

LEGISLATIVE AND PLANNING POLICY CONTEXT

- 4.10 This section summarises the key legislation and policies relevant to ecology and nature conservation.

Legislative Context

- 4.11 Relevant wildlife legislation underpinning the conservation of designated sites, habitats and species is summarised in Table 4.1

Table 4.1
Relevant Legislation

Legislation	Description
The Wildlife Act 1976 and Wildlife (Amendment) Act 2000	The Wildlife Act is the primary legislation in Ireland which protects animals, birds, plants and their habitats. It also allows the designation of Natural Heritage Areas (NHA) and statutory Nature Reserves and the regulation of hunting and controls in wildlife trading.
The Flora (Protection) Order 2015	The Flora (Protection) Order 2015 provides statutory protection to a number of rare plant species in Ireland from being wilfully cut, picked uprooted or damaged or part of the plants removed.

¹ CIEEM (2016). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal* 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

² Environmental Protection Agency (2002). *Guidelines on the Information to be Contained in Environmental Impact Statements*. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford.

³ Environmental Protection Agency (2003). *Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements)*. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford.

Legislation	Description
European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)	The European Communities (Birds and Natural Habitats) Regulations 2011 transpose into national law European Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) and Directive 2009/147/EC on the Conservation of Wild Birds (The Birds Directive) that provides for the designation and protection of 'European sites' including Special Areas of Conservation (SAC) and Special Protection Area (SPA), the protection of 'European Protected Species', and the adaptation of planning and other controls for the protection of European Sites. The regulations introduce a review procedure for plans and projects likely to significantly affect a European site, and licensing requirements for developments that may affect a European protected species.

Planning Policies

National

4.12 Nationally, the Government’s commitment to sustainable development is set out in a number of documents including the National Spatial Strategy 2002 to 2020 and ‘Our Sustainable Future’ the Framework for Sustainable Development in Ireland (2012).

Regional

4.13 The Regional Planning Guidelines for the Greater Dublin Area (GDA) 2010-2022 set out the long-term spatial planning strategy for the GDA. The strategic policies relevant to ecology and nature conservation within these guidelines are summarised in Table 4.2.

**Table 4.2
Regional Policies Relevant to Ecology and Nature Conservation**

Legislation	Description
Natural Heritage -GIP2	To protect and conserve the natural environment, in particular nationally important and EU designated or candidate sites such as Special Protection Areas (SPA), Special Areas of Conservation (SAC) and proposed Natural Heritage Areas (NHAs), protected habitats and species, and habitats and species of local biodiversity value. This policy also includes new or extended ecological sites that are notified or designated in the lifetime of the Regional Planning Guidelines (RPGs). Appropriate measures to protect Natura 2000 sites should be identified at the initial stages of all planning processes and included as a material consideration in order to inform future development.

Legislation	Description
River Basins - GIP3	To ensure alignment between the core objectives of the Water Framework Directive, (including River Basin Management Plans and Programmes of Measures affecting the Greater Dublin Area) and other related plans such as County Development Plans and related Local Area Plans; Habitat and Species Protection Plans under the Habitats Directive, Water Services Investment Programme, Nitrates Action Programme; and Flood Management Plans.
Green Infrastructure – GIP6	To ensure the protection, enhancement and maintenance of the natural environment and recognize the health benefits as well as the economic, social, environmental and physical value of green spaces through the development of an integration of Green Infrastructure (GI) planning and development in the planning process.

Local

4.14 Planning policy at the local level is provided by the Fingal County Development Plan (CDP) 2011–2017. The Fingal CDP contains a number of policies relevant to ecology and nature conservation which are summarised in Table 4.3 below.

**Table 4.3
Regional Policies Relevant to Ecology and Nature Conservation**

Legislation	Description
AA1	Ensure that all plans and projects in the County which could, either individually or in-combination with other plans and projects, have a significant effect on a Natura 2000 site (or sites) will be subject to Appropriate Assessment Screening.
BD04	Ensure that all development proposals include measures to protect and enhance biodiversity.
BD08	Ensure that sufficient information is provided as part of development proposals to enable Appropriate Assessment Screening to be undertaken and to enable a fully informed assessment of impacts on biodiversity to be made.
BD09	Ensure that Natura Impact Statements and any other ecological impact assessments submitted in support of proposals for development are carried out by appropriately qualified professionals and that any necessary survey work takes place in an appropriate season.
BD10	Raise awareness in relation to invasive species and ensure, in so far as possible, that proposals for development do not lead to the spread of invasive species. In particular, ensure that invasive species do not form part of the landscape design proposals for proposed developments.
BD11	Protect inland fisheries within and adjacent to Fingal and take full account of Inland Fisheries Ireland Guidelines in this regard when undertaking, approving or authorizing development or works which may impact upon rivers, streams and watercourses and their associated habitats and species.

Legislation	Description
BD12	Strictly protect areas designated or proposed to be designated as Natura 2000 sites (also known as European sites), including any areas that may be proposed for designation or designated during the period of this Plan. These include SAC's designated pursuant to the Habitats Directive and SPAs designated pursuant to the Birds Directive, a number of which have also been designated under the Ramsar Convention.
BD13	Ensure Appropriate Assessment Screening and, where required, full Appropriate Assessment is carried out for any plan or project which, individually, or in combination with other plans and projects, is likely to have a significant direct or indirect impact on any Nature 2000 site or sites.
BD14	Ensure planning applications for proposed developments likely to have significant direct or indirect impacts on any Natura 2000 site or sites are accompanied by a Natura Impact Statement prepared in accordance with the Guidance issued by the Department of the Environment, Heritage and Local Government.
BD15	Protect the ecological integrity of proposed NHAs, NHAs, Statutory Nature Reserves, Refuges for Fauna and Annex I habitats.
BD16	Ensure that development does not have a significant adverse impact on proposed NHAs, NHAs, Statutory Nature Reserves, Refuges for Fauna, Annex I habitats, and on rare and threatened species including those protected by law and their habitats.
BD17	Ensure ecological impact assessment is carried out for any proposed development likely to have a significant impact on proposed NHAs, NHAs, Statutory Nature Reserves, Refuges for Fauna, Annex I habitats, and on rare and threatened species including those protected by law and their habitats. Ensure appropriate avoidance and mitigation measure are incorporated into development proposals as part of any ecological impact assessment.
BD20	Maintain and/or enhance the biodiversity of the nature development areas indicated on the Green Infrastructure maps.
BD21	Protect the ecological functions of the corridors indicated on the Development Plan Green Infrastructure maps.
BD22	Protect rivers, streams and other watercourses and maintain them in an open state capable of providing suitable habitat for fauna and flora, including fish.
BD23	Ensure that no development, including clearance and storage of materials, takes place within a minimum distance for 10 – 15m measure from each bank of any river, stream or watercourse in the County.
BD27	Protect existing woodlands, trees and hedgerows which are of amenity or biodiversity value and/or contribute to the landscape character and ensure that proper provision is made for their protection and management

Biodiversity Planning

- 4.15 Ireland’s second National Biodiversity Plan (NBP)⁴ 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*”.
- 4.16 To implement the NBP, a number of Local Biodiversity Action Plans have been produced including the Fingal Biodiversity Action Plan 2010-2015 that identifies a programme of actions to protect and enhance biodiversity at the local level and which has links into the Fingal Heritage Plan 2011-2017.

METHODOLOGY

Area of Study

- 4.17 The area of study includes all the land within the red line application boundary for the proposed increase in permitted waste intake and backfilling of the North and West Quarries at Huntstown Quarry indicated in Figure 4.1, as well as important ecological sensitive features within the potential zone of influence of this application site with the potential to be directly and indirectly affected by the proposed development.

Establishing the Ecological Baseline Conditions

- 4.18 Baseline ecological data were collated through a combination of desk-based study and field survey consistent with current standard methodologies and published good 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 practice⁵.
- 4.19 Table 4.4 provides a summary of the ecological scope of works and methods used to establish the ecological baseline conditions within the study area
- 4.20 Over and above the scope of works in Table 4.4, 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

**Table 4.4
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 and the National Parks and Wildlife Service (NPWS) interactive mapping facility (www.designatedareas.ie).

⁴ Department of Arts, Heritage and the Gaeltacht (2011). *Actions for Biodiversity 2011-2016 -Ireland’s National Biodiversity Plan*.

⁵ Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. Chapman and Hall (E & F N Spon), London.

Study	Scope of Work	Study Area	Methodology
	Protected, rare and notable species	2km grid squares encompassing the application site (grid squares O14A and O14B).	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	Site visit and walkover survey by SLR ecologist on 2 nd June 2016. Standard approach to the classification and mapping of habitats in accordance with Fossitt (2000) ⁶ to Level 3 and target notes where applicable to describe any feature of particular ecological interest. 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 ecological that may require mitigation or an ecologically sensitive design in respect of the proposed development.
Hedgerow Appraisal	To assess the conservation value of the hedgerows	Application site	A detailed assessment of the hedgerows within and along the boundaries of the application site was undertaken by SLR during the Habitat Survey. Each hedgerow was assessed against the criteria for determining the 'significance' of hedgerows under the Hedgerow Appraisal System (HAS) ⁷ based on ranking the hedgerows on a scale of 0 (low significance) to 4 (highly significant) in five categories of significance including: historical; species diversity; structure, construction and associated features; habitat connectivity and landscape

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⁶ Fossitt, J. A. (2000). *A Guide to Habitats in Ireland*. Reprint 2007. The Heritage Council, Kilkenny, Ireland.

⁷ Foulkes, N., Fuller, J., Little, D., McCourt, S. and Murphy, P. (2013). *Hedgerow Appraisal System – Best Practise Guidance on Hedgerow Survey, Data Collation and Appraisal*. Woodlands of Ireland, Dublin.

Uncertainty of Data and Limitations

- 4.21 The Habitat Survey was conducted at an appropriate time of year to undertake such a survey for the habitats present on the site. The results are, therefore, deemed representative of the habitats present within the study area and include the dominant and characteristic species of flora.
- 4.22 The lack of evidence of any one particular protected species does not necessarily preclude its presence at the site either at this current time or in the future. It is considered however, that the timing of the site visits were suitable for protected species and their habitat-based assessment, as most species would have been active during this time and provided evidence of their presence.

Assessment Methodology

Evaluation of Ecological Features

- 4.23 CIEEM suggest that to ensure a consistency of approach, ecological features (designated sites, habitats and species) are valued in accordance with the geographical frame of reference. For the purpose of this assessment the geographical frame of reference defined by the Transport Infrastructure Ireland⁸ has been used, as detailed below:
- International;
 - National;
 - County;
 - Local (higher); and
 - Local (lower).
- 4.24 The above categories are then applied to the features identified in baseline surveys and desk-based studies. Some features 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 the evaluation of designated sites, habitats and species is provided in Table 4.5.

⁸ NRA (2009). *Guidelines for Assessment of Ecological Impacts of National Road Schemes*. Revision 2. National Roads Authority, Dublin.

**Table 4.5
Criteria for the Evaluation of Important Ecological Features**

Evaluation	Criteria
International	<p>An internationally designated site or proposed site including Special Area of Conservation (SAC), Site of Community Importance (SCI) and Special Protection Area (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 NBP.</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>
National	<p>A nationally designated site or proposed as a National Heritage Area (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 BAP.</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>

Evaluation	Criteria
Local (Higher)	<p>Locally important populations of priority species or habitats or natural heritage features identified in any Local BAP.</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

4.25 The assessment of potential ecological impacts has been carried out using the guidelines published by the CIEEM and EPA and can be summarised as:

- the identification of the range of potential impacts that may arise from the proposed development;
- the consideration of the systems and processes in place to avoid, reduce and mitigate the possible effects of these impacts;
- the identification of opportunities for ecological enhancement within the development;
- an assessment of the residual impacts, following consideration for the implementation of avoidance, mitigation and enhancement measures; and
- where necessary the identification of compensation required to offset any residual effects.

4.26 Table 4.6 provides a summary of the criteria used to evaluate the residual impacts and assess the significance of any such impact.

Table 4.6
Key Considerations when Characterising Impacts

Description	Definition
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.

Description	Definition
Magnitude	Size, amount, intensity and volume of any impact on any particular feature including any severity of effect, based on EPA guidance, as imperceptible, slight, moderate, significant and profound
Duration	Effects may be described, based on EPA's guidance 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

4.27 Impacts are defined as being negative or positive. The term significant is independent of the value of the receptor. A significant impact is defined as an impact on the integrity of a defined ecosystem and/or an action that undermines the conservation objectives (either specific or broad) of an important ecological feature.

4.28 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.

4.29 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.

ECOLOGICAL BASELINE CONDITIONS

4.30 The section provides a general overview of the existing ecological baseline conditions at the application site and within its wider surrounding environment.

General Site Description

4.31 The application site comprises the North and West Quarries that form part of a larger quarry complex at Huntstown Quarry.

4.32 The North Quarry covers an area of c.36.1ha that includes the limestone quarry void, associated perimeter screening and overburden mounds and some industrial buildings, structures and associated hardstanding. Since October 2015, inert waste soils and stone have been imported under a waste licence (EPA Ref. No. W0277-01) as part of the restoration scheme for the North Quarry approved by grant of planning permission obtained in August 2014 (Fingal County Council Ref. No FW12A-0022 and An Bord Pleanála Ref. No. 06F.241693).

4.33 The West Quarry covers an area of c.12.2ha that has been predominantly stripped of its soil and overburden cover, but which was not quarried into underlying rock and has subsequently undergone some natural regeneration.

Designated Sites

4.34 The application site is not subject to any statutory or non-statutory nature conservation designations and there are no such sites within a 2km radius of the application site.

Habitats

4.35 The habitat types recorded within the application site based on the classification as defined by Fossitt (2000) are presented in Table 4.7.

**Table 4.7
Summary of Habitat Recorded within the Application Site**

Level 1 Habitat Hierarchy	Level 2 Habitat Hierarchy	Level 3 Habitat Hierarchy	Area / Length
W - Woodland & Scrub	WS – Scrub / transitional woodland	WS1 – Scrub	1.7 ha
	WL – Linear woodland / scrub	WL1 – Hedgerows	571m
		WL2 – Treelines	434m
	WN – Semi-natural woodland	WN5 - Riparian Woodland	0.1ha
G - Grassland & Marsh	GS – Semi-natural grassland	GS1 – Dry calcareous and neutral grassland	2.7 ha
		GS2 – Dry meadows and grassy verges	9.6 ha
	FL – Lakes and ponds	FL8 – Other artificial lakes and ponds	1.7 ha
E - Exposed rock and disturbed ground	ED – Disturbed ground	ED2 – Spoil and bare ground	5.8 ha
		ED4 – Active quarries and mines (including the sub-habitat ER2 – Exposed calcareous rock)	21.3 ha
B - Cultivated and built land	BC - Cultivated land	BC1 – Arable crops	0.5 ha
	BL - Buildings and artificial surfaces	BL3 – Buildings and artificial surfaces	3.7 ha

4.36 Figure 4.1 shows the location and extent of the habitats recorded at the application site along with important habitats and other features identified immediately adjacent to the application site. A summary description and ecological evaluation of each of the habitat and other key features is provided in Table 4.8, with any detailed Target Notes presented in Appendix A.

**Table 4.8
Description and Evaluation of Habitats and Other Features**

Habitat / Feature	Description	Location	Level of Value	Rationale
Woodland and Scrub				
WD1 – (Mixed) broadleaved woodland	WD1 – (Mixed) broadleaved woodland habitat comprises small blocks of broadleaved woodland plantation created for screening purposes that typically include sycamore (<i>Acer pseudoplatanus</i>), alder (<i>Alnus glutinosa</i>), ash (<i>Fraxinus excelsior</i>) and rowan (<i>Sorbus aucuparia</i>).	North and West Quarries	Local (lower)	Relatively young plantation woodlands of low conservation value at this current time but which provide some opportunities for a range of wildlife.
WS1 – Scrub	WS1 – Scrub was present on the screening berms, overburden storage bunds and in places around the peripheries of the North and West Quarries, where it typically forms a mosaic with GS2 – Dry meadows and grassy verges habitat. The scrub largely consists of common hawthorn (<i>Crataegus monogyna</i>), but can also include dense patches of bramble (<i>Rubus fruticosus</i> agg.). Other woody species present can include sycamore, butterfly-bush (<i>Buddleja davidii</i>), hazel (<i>Corylus avellana</i>), ash, goat willow (<i>Salix caprea</i>) and elder (<i>Sambucus nigra</i>).	North and West Quarries	Local (lower)	Typically common and widespread habitat of low conservation value but which provide some opportunities for wildlife in particular birds and invertebrates.
WL1 – Hedgerows / WL2 - Treelines	WL1 – Hedgerows and/ WL2 – Treelines are found along the southern, western and northern boundaries of the North Quarry (TN2 to TN9 and TN11) and along the northern and southern boundaries of the West Quarry (TN1 and TN14) as well as remnant hedgerows / treelines retained during the removal of topsoils and overburden (TN12 and TN13). A summary of the hedgerow appraisal is presented at Appendix B.	North and West Quarries	Local (higher)	A habitat detailed within the Fingal Biodiversity Action Plan. A relatively common and widespread habitat in a national and local context but a resource that is in decline in Fingal due to development and lack of management. Hedgerows TN5, TN9, TN11 and TN14 assessed as being heritage hedgerows for their historical significance, but which generally are of low ecological value as per all other hedgerows in the application site.

Habitat / Feature	Description	Location	Level of Value	Rationale
Grassland and Marsh				
GS1 – Dry calcareous and neutral grassland	<p>GS1 – <i>Dry calcareous and neutral grassland</i> habitat was found in a field to the south of the area stripped of topsoil and overburden in the West Quarry. The grassland has a tight sward that is grazed by horses consisting of creeping bent (<i>Agrostis stolonifera</i>), sweet vernal-grass (<i>Anthoxanthum odoratum</i>), false oat-grass (<i>Arrhenatherum elatius</i>), crested dog's-tail (<i>Cynosurus cristatus</i>), red fescue (<i>Festuca rubra</i> agg.), Yorkshire-fog (<i>Holcus lanatus</i>) and some perennial ryegrass (<i>Lolium perenne</i>). The herbaceous component of the sward includes: daisy (<i>Bellis perennis</i>), yellow-wort (<i>Blackstonia perfoliata</i>), common mouse-ear (<i>Cerastium fontanum</i>), creeping thistle (<i>Cirsium arvense</i>), common centaury (<i>Centaurium erythraea</i>), common eyebright (<i>Euphrasia nemorosa</i> agg.), oxeye daisy (<i>Leucanthemum vulgare</i>), common bird's-foot-trefoil (<i>Lotus corniculatus</i>), red bartsia (<i>Odontites vernus</i>), ribwort plantain (<i>Plantago lanceolata</i>), cowslip (<i>Primula veris</i>), selfheal (<i>Prunella vulgaris</i>), creeping buttercup (<i>Ranunculus repens</i>), common ragwort (<i>Senecio jacobaea</i>), red clover (<i>Trifolium pratense</i>) and white clover (<i>Trifolium repens</i>). Some scrub encroachment of this grassland field, comprising of common hawthorn and bramble, was evident.</p>	West Quarry	Local (higher)	<p>A habitat detailed in the Fingal Biodiversity Action Plan where characterised by an abundance of wildflowers and managed traditionally by cutting or light grazing.</p> <p>A habitat that appears to have developed on an area subject to a degree of historic disturbance but which supports a good diversity of species.</p>
GS2 – Dry meadows and grassy verges	<p>GS2 – <i>Dry meadows and grassy verges</i> habitat was predominantly found on the screening berms and overburden storage bunds, but which was also found in other small areas where the grassland is unmanaged. These grassland areas typically form a mosaic with WS1 – <i>Scrub</i> habitat.</p> <p>All these grasslands have rank swards comprising the grasses of false oat-grass, cock's-foot (<i>Dactylis glomerata</i>), common couch (<i>Elytrigia repens</i>), red fescue, Yorkshire-fog and rough meadow-grass (<i>Poa trivialis</i>).</p>	North and West Quarries	Local (lower)	<p>A typically common and widespread habitat comprising rank grassland with some botanical interest but generally of low ecological and nature conservation value but providing some opportunities for wildlife.</p>

Habitat / Feature	Description	Location	Level of Value	Rationale
	<p>Glaucous sedge (<i>Carex flacca</i>), common sedge (<i>Carex nigra</i>) and hard rush (<i>Juncus inflexus</i>) can also be found more locally within these habitats.</p> <p>The herbaceous components are typically species-poor comprising: rosebay willowherb (<i>Chamerion angustifolium</i>), creeping thistle, spear thistle (<i>Cirsium vulgare</i>), hogweed (<i>Heracleum sphondylium</i>), meadow vetchling (<i>Lathyrus pratensis</i>), autumn hawkbit (<i>Leontodon autumnalis</i>), ribwort plantain, creeping cinquefoil (<i>Potentilla reptans</i>), selfheal, common ragwort, red clover, white clover, dandelion (<i>Taraxacum officinale</i> agg.) and colt's-foot (<i>Tussilago farfara</i>). Pointed spear-moss (<i>Calliergonella cuspidata</i>).</p> <p>Other species locally present include: wild carrot (<i>Daucus carota</i> ssp <i>carota</i>), black medick (<i>Medicago lupulina</i>), cowslip, red bartsia, creeping buttercup, broad-leaved dock (<i>Rumex obtusifolius</i>), common comfrey (<i>Symphytum officinale</i>), common nettle (<i>Urtica dioica</i>) and field horsetail (<i>Equisetum arvense</i>).</p>			
<p>GS4 – Wet grassland / GM1 - Marsh</p>	<p>The largest extent of <i>GS4 – Wet grassland</i> habitat was present in a field off the main access into the existing Inert Soil Recovery Facility. The grassland has a sward dominated by Yorkshire-fog and creeping buttercup with daisy, spear thistle and hard rush also present. In the southwest corner of the this field where ground conditions are wetter the habitat is developing to <i>GM1 – Marsh</i> with creeping bent, common fleabane (<i>Pulicaria dysenterica</i>), curled dock (<i>Rumex crispus</i>), reedmace (<i>Typha latifolia</i>), blue water-speedwell (<i>Veronica anagallis-aquatica</i>) and soft rush (<i>Juncus effusus</i>) all present.</p> <p>Other smaller areas of <i>GS4 – Wet grassland</i> typically form part of a mosaic with other grassland types where wetter ground conditions exist through impeded drainage generally denoted by an abundance of rushes that can</p>	<p>North and West Quarries</p>	<p>Local (Lower)</p>	<p>Relatively small areas of habitat providing some local opportunities for wildlife.</p>

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Habitat / Feature	Description	Location	Level of Value	Rationale
	<p>include soft rush, hard rush and occasionally jointed rush (<i>Juncus articulatus</i>).</p> <p>A relatively small area of <i>GM1 – Marsh</i> habitat was found adjacent the water management system directly upstream of the discharge point to the Ballystrahan Stream. The habitat is dominated by soft rush but with abundant tufted hair-grass (<i>Deschampsia cespitosa</i>) and with the presence of tall herbs including great willowherb (<i>Epilobium hirsutum</i>), hemp-agrimony (<i>Eupatorium cannabinum</i>) and Meadowsweet (<i>Filipendula ulmaria</i>) as well as scattered stands of reedmace. Other wetland species present include silverweed (<i>Potentilla anserina</i>) and common fleabane.</p>			
Freshwater				
FL8 – Other artificial lakes and ponds	<p>The <i>FL8 – Other artificial lakes and ponds</i> habitat within the application site includes surface water attenuation and settlement ponds, that form part of the Huntstown Quarry water management system, as well one other permanent pond in the North Quarry (TN10).</p> <p>The surface water attenuation ponds include: an online pond that receives water pumped from a sump in the floor of the North Quarry via a drainage ditch dominated by dense stands of reedmace; and a series of four interconnected ponds that receive surface water run-off from the concrete processing facility. These ponds are high in calcium carbonates that discolour the water in all but the last pond. With the exception of some marginal reedmace, these ponds are devoid of aquatic vegetation.</p> <p>In the West Quarry, where the topsoils and overburden have been removed, a number of semi-permanent and ephemeral ponds are present where water fills the depressions left behind (TN15 to TN29)</p>	North and West Quarries	Local (higher)	<p>A habitat detailed within the Fingal Biodiversity Action Plan under wetlands that are relatively uncommon in Fingal.</p> <p>A variety of established and developing permanent and temporary ponds that support a range of wetland species of flora and fauna.</p>

Habitat / Feature	Description	Location	Level of Value	Rationale
FW4 - Drainage ditches	<p>The drainage ditches present within the application site form part of the surface water management system that include a ditch that receives water pumped from the sump in the floor of the North Quarry and ditches to convey surface water runoff emanating from the access road serving the Inert Soil Recovery Facility.</p> <p>The drainage ditch receiving the water from the North Quarry had a channel width of 1.5m and banks up to 2m in height. Vegetation was typically sparse but where present included water plantain (<i>Alisma plantago-aquatica</i>), common water-starwort (<i>Callitriche stagnalis</i>), great willowherb, jointed rush, water forget-me-not (<i>Myostis scorpioides</i>), fennel pondweed (<i>Potamogeton pectinatus</i>) and branched bur-reed (<i>Sparganium erectum</i>).</p> <p>The roadside drainage ditches were typically devoid of in-channel and bankside vegetation.</p>	North Quarry	Local (lower)	Habitat primarily created to provide a surface water management function that has low conservation and ecological value.
Exposed rock and disturbed ground				
ED2 – Spoil and bare ground / ED3 – Recolonising bare ground	<p><i>ED2 – Spoil and bare ground</i> and <i>ED3 – Recolonising bare ground</i> habitats were found in areas subject to on-going disturbance, or historically disturbed and which included the area to the north of the North Quarry void and in the West Quarry where the topsoils and overburden have been stripped.</p> <p>In most cases the species composition for each of these habitat-types is similar but only the vegetation ground coverage varies.</p> <p>Species present can include: the graminoid species of sweet vernal-grass, creeping bent, glaucous sedge, common sedge, crested dog's-tail, cock's-foot, red fescue, Yorkshire-fog, hard rush and rough meadow-grass; the forbs of scarlet pimpernel (<i>Anagallis arvensis</i>), daisy, yellow-wort, common mouse-ear, rosebay willowherb, creeping thistle, spear thistle, great willowherb, Ground-ivy</p>	North and West Quarries	Local (lower)	Typically common and widespread of low conservation value but which provides some opportunities for a number of species, in particular invertebrates.

Habitat / Feature	Description	Location	Level of Value	Rationale
	<p>(<i>Glechoma hederacea</i>), cat'-ear (<i>Hypochaeris radicata</i>), hogweed, perforate St-John's-wort (<i>Hypericum perforatum</i>), oxeye daisy, common bird's-foot-trefoil, ribwort plantain, black medick, mouse-ear hawkweed (<i>Pilosella officinarum</i>) silverweed, creeping cinquefoil, cowslip, common fleabane, meadow buttercup (<i>Ranunculus acris</i>), creeping buttercup, wild mignonette (<i>Reseda lutea</i>), curled dock, hop trefoil (<i>Trifolium campestre</i>), red clover, white clover, colt's-foot, common nettle, germander speedwell (<i>Veronica chamaedrys</i>), thyme-leaved speedwell (<i>Veronica serpyllifolia</i>) and common vetch (<i>Vicia sativa</i>); as well as field horsetail.</p> <p>In the West Quarry areas stripped of topsoils adjacent to the eastern retained hedgerow are showing signs of succession to a grassland community with frequent sweet vernal-grass and also notable for the presence of common spotted-orchid (<i>Dactylorhiza fuchsii</i>) and pyramidal orchid (<i>Anacamptis pyramidalis</i>).</p>			
ED4 – Active quarries and mines (including the sub-habitat ER2 – Exposed calcareous rock)	The primary habitat of the North Quarry void is <i>ED4 – Active quarries and mines</i> that has bare rock walls and a quarry floor supporting the sub-habitat <i>ER2 – Exposed calcareous rock</i> , that historically has been subject to high levels of disturbance and subsequently is largely devoid of vegetation except for some hart's-tongue (<i>Asplenium scolopendrium</i>) that have managed to colonise gaps in the rock faces.	North Quarry	Local (Lower)	An anthropogenic habitat subject to high levels of disturbance with low botanical interest and offering very limited opportunities for fauna.
Cultivated and Built Land				
BC1 – Arable crops	A small part of an arable field lies in the western part of the application site with narrow field margins supporting species typically found in the <i>GS2 – Dry meadows and grassy verges</i> grassland habitats.	North Quarry	Local (Lower)	An anthropogenic habitat subject to high levels of disturbance with low botanical interest and offering limited opportunities for fauna.

Habitat / Feature	Description	Location	Level of Value	Rationale
BL3 – Buildings and artificial surfaces	Buildings and artificial surfaces within the application site include: a machine maintenance building, laboratory, offices and weighbridge forming part of the overall infrastructure serving Huntstown Quarry; a dedicated weighbridge for the existing Inert Soil Recovery Facility; and internal haul roads and access routes.	North Quarry	Local (Lower)	An anthropogenic negligible nature conservation and ecological.
Other Features				
Tributary of the Ballystrahan Stream	<p>A small watercourse that receives the discharge from the northern part of Huntstown Quarry. The watercourse has a mean channel width of 1.2m at normal water level and banks ranging from 1m to 1.5m in height and at an angle of 45°. The substrate consisted of unconsolidated mud silt and accumulations of leaf litter. The water depth at the time of the walkover survey ranged from 0.1m to 0.3m deep with negligible rate of flow.</p> <p>The channel was found to be devoid of any aquatic or marginal vegetation, due largely to the heavy shading effect of the dense canopy from plantation woodland in the quarry site and by hawthorn dominated hedgerows growing along the top of both banks outside the quarry site. The exception was some lesser pond sedge (<i>Carex acutiformis</i>), hard rush, watercress (<i>Rorippa nasturtium-aquaticum</i>) and celery-leaved buttercup (<i>Ranunculus sceleratus</i>) present at the discharge point.</p>	Immediately downstream of discharge point from the Northern Part of Huntstown Quarry	Local (lower)	A small watercourse that without the discharge from Huntstown Quarry would be nothing more than a small drainage ditch that provides very limited opportunities for riparian flora and fauna due to its physical nature and the heavy shading effect of the trees and shrubs growing on its banks.

Species

- 4.37 Details of protected, rare and notable species records within a 2km radius of the application site (encompassing grid squares O14A and O14B) were obtained during the desk-based study and during the Habitat Survey, where general observations and searches were made for the presence, or potential presence of protected, rare and/or notable species for flora and fauna.
- 4.38 Table 4.9 provides a summary of species of importance and an evaluation of the site for these species.

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**Table 4.9
Identification and Evaluation of Important 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	<p>NPWS holds records for four rare and protected species of flora within the 10km grid square (O14) encompassing the application area including: red hemp-nettle (<i>Galeopsis angustifolia</i>); meadow barley (<i>Hordeum secalinum</i>); hairy St John's-wort (<i>Hypericum hirsutum</i>) and hairy violet (<i>Viola hirta</i>). None of these records are recent or relate to the application site.</p> <p>No records for any protected or notable species of flora were returned by NBDC within the 2km search area.</p> <p>Historically the protected blue fleabane (<i>Erigeron acer</i>) has been recorded at Huntstown Quarry in an area of calcareous and orchid rich grassland to the east of the Central Quarry, the most recent by SLR in 2012.</p>	<p>During the Habitat Survey no protected, rare or notable species of flora were recorded at, or immediately adjacent the application site.</p>	N/A	All reasonable likelihood of absence

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Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Non-native invasive species	No non-native invasive species of flora, as listed under the either the Wildlife Act 1976, Wildlife (Amendment) Act 2000 or European Communities (Birds and Natural Habitats) Regulations 2011 were returned by NBDC within the 2km search area.	A small stand of Japanese knotweed (<i>Fallopia japonica</i>) is present adjacent the access road into the Inert Soil Recovery Facility in the North Quarry. This was treated with an appropriate herbicide application in summer 2015 and is due for further retreatment to kill any regrowth of plant material in accordance with an existing Non-native Invasive Species Eradication Plan as conditioned under Waste Licence (Ref. No. W0277-01). No other non-native invasive species were recorded as present within the application site.	N/A	Active management treatment of existing stand of Japanese knotweed for the eradication of this non-native invasive species.
Mammals				
Bat assemblage	NBDC returned no records for any bat species within the 2km search area.	All buildings, structures, trees and features within and immediately adjacent the application site offer negligible roosting opportunities for bats. The application site generally provides low to suitability habitat for foraging bats within the footprint of any backfilling operations but with some moderate suitability outside these areas which provide some connectivity to the wider landscape via hedgerows and treeslines that could be used by bats for commuting.	Local (lower)	All bat species are fully protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the EC (Birds and Natural Habitats) Regulations 2011. Site provides negligible roosting opportunities for bats. The application site provides some foraging habitat for a range of bat species but generally this is of low quality. 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.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Badger	NBDC returned a solitary record for badger (<i>Meles meles</i>) for grid square O14A	During the Habitat Survey no evidence of badger activity (i.e. tracks, latrines, snuffle holes or hairs) was found within, or immediately adjacent the application site.	N/A	Not present
Irish hare	NBDC returned a solitary record for Irish hare (<i>Lepus timidus hibernicus</i>) grid square O14A.	During the Habitat Survey two individual Irish hares were recorded in the West Quarry. No Irish hares were recorded in the North Quarry but there could be some at screening berms and overburden bunds to the west of this part of the application site.	Local (higher)	Species protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. A species with a widespread distribution in Ireland. Present within the application site and likely throughout the wider surrounding area where suitable habitat for this species is present.
Other mammal species	NBDC returned records for rabbit (<i>Oryctolagus cuniculus</i>) and fox (<i>Vulpes vulpes</i>) within grid square O14A.	During the Habitat Survey evidence of rabbit and fox was recorded within 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 providing 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 41 species of birds within the search area, of which only one species is listed under Annex I of the EU Birds Directive, namely peregrine falcon (<i>Falco peregrinus</i>).	The habitats present in the application site provide opportunities for a range of birds typically associated with quarries and farmland. A total of 24 bird species were recorded during a breeding bird survey of the North Quarry in 2015, undertaken in compliance with	Local (higher)	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
		<p>conditions attaching to existing Waste Licence (Ref. No. W0277-01) . A copy of the report is provided in Appendix C. During the Habitat Survey on 2nd June 2016, a total of 15 species were recorded in the North and West Quarries, that included house martin (<i>Delichon urbica</i>) and moorhen (<i>Gallinula chloropus</i>) additional to the species recorded in 2015 and both of which were observed in the West Quarry.</p> <p>Of the species recorded, none are listed under Annex I of the EU Birds Directive. Two bird species recorded are red listed⁹ and five species amber listed¹⁰ Birds of Conservation Concern in Ireland (BoCCI)¹¹.</p>		The application site provides opportunities for a range of typical common and widespread species associated farmland 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.
Reptiles				
Common lizard	There are no historical records for common lizard (<i>Zootoca vivipara</i>) at, or within 2km search area of the application site.	<p>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.</p> <p>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.</p>	N/A	All reasonable likelihood of absence

⁹ 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.

¹⁰ 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.

¹¹ 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
Amphibians				
Common frog	NBDC returned no records for common frog (<i>Rana temporaria</i>) within the 2km search area. Historically common frog has been recorded as present and breeding throughout the Huntstown Quarry complex.	During the Habitat Survey common frog was confirmed as present and breeding in West Quarry (TN16, TN18, TN19 and TN29). Although no common frogs were confirmed with the surface water features in the North Quarry some of these are considered to provide suitable habitat for breeding purposes with some surrounding high quality terrestrial habitat.	Local (higher)	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. A typically common and widely distributed species in Ireland and throughout the local area. Confirmed breeding habitat but unlikely to be critical in maintaining local population status of this species given availability of other potential breeding sites around the quarry complex.
Smooth Newt	NBDC returned no records for smooth newt (<i>Lissotriton vulgaris</i>) within the 2km search area. Historically smooth newts have been recorded as present and breeding at Huntstown Quarry.	During the Habitat Survey, smooth newts were recorded as present in four of the ponds (TN14, TN15, TN19 and TN23) in the West Quarry. No smooth newts were recorded in the water features in the North Quarry, although some of the ponds, in particular TN10, provides suitable breeding habitat with high quality surrounding terrestrial habitat for this species.	County	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. A species widely distributed throughout Ireland, but with not many records in Fingal. Confirmed breeding and terrestrial habitat within the West Quarry with the potential to support a medium to high population of this species.
Invertebrates				
Invertebrates	NBDC did not return any records for any protected, rare or notable species of invertebrates within the 2km search area.	During the Habitat Survey no rare or notable species of invertebrate were observed within the application. Whilst no site is without invertebrate interest, it is considered unlikely, given the habitat types, that the application site would support any protected invertebrate species.	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.

Species	Desk-based Study	Description of Use or Likely Use of the Application Site	Level of Value	Rationale
Other Important Species				
Other species not identified above	NBDC did not return any records for any other important 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.	N/A	All reasonable likelihood of absence

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Summary of Ecological Features for Impact Assessment

- 4.39 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.
- 4.40 Transport Infrastructure Ireland guidelines indicate that where receptors have been evaluated at a value of ‘Local (lower)’ no further assessment is deemed necessary as the impact on these receptors is not likely to be of significance. 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.
- 4.41 Based on the above, the identified important ecological features with the potential to be affected by proposed increase in permitted waste imported to the inert soil recovery facility at Huntstown Quarry and carried forward for further ecological impact assessment are detailed in Table 4.10.

**Table 4.10
Identified Important Ecological Features**

Key Features	Important Ecological Feature
Habitats and other features	WL1 – Hedgerows / WL2 - Treelines
	GS1 – Dry calcareous and neutral grassland
	FL8 – Artificial ponds and lakes
Species	Irish hare
	Bird assemblage
	Common frog
	Smooth newt

ASSESSMENT OF EFFECTS AND MITIGATION

- 4.42 This section of the EclA assesses the ecological impacts from the proposed increase of permitted waste imported to the inert soil recovery facility at Huntstown Quarry 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.
- 4.43 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

- 4.44 A detailed description of the existing development is presented in Chapter 2 of the EIS. In essence, the planned development provides for an increase in the intake rate of waste soils and stone from a maximum of 750,000 tonnes per annum at the present time to 1,500,000 tonnes per annum in future years, as part of already consented operations for the backfilling and restoration of the North and West Quarries.

Identification and Characterisation of Potential Impacts

- 4.45 The sources of potential impacts arising from the proposed increase of permitted waste imported to the existing licensed inert soil recovery facility at Huntstown Quarry 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 4.11.
- 4.46 The proposed increase of intake of waste soils will not significantly alter the approved restoration plan for Huntstown Quarry, therefore it is considered unnecessary to assess the potential impacts arising from any such restoration activities once the quarry voids have been infilled.

**Table 4.11
Sources of Potential Operational Phase Impacts**

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
Operational Phase		
<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 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 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 areas immediately adjacent to it only.</p>	<p>WL1 – Hedgerows / WL2 – Treelines GS1 – Dry calcareous and neutral grassland FL8 – Artificial ponds and lakes Irish hare Bird assemblage Common frog Smooth newt</p>

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
Disturbance from human activity, noise and vibration	<p>Increases in disturbance, including noise and visual disturbance, from 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. 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). The level of disturbance will also be dependent upon existing ambient noise levels and maximum noise levels.</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>The zone of influence of the proposed development is assessed to extend up to 300m from the application site.</p>	<p>Irish hare Bird assemblage</p>
Dust deposition	<p>The end-tipping placement and compaction of soil and stone wastes, trafficking of HGVs over unsealed ground and other related activities have the potential to generate dust.</p> <p>Literature suggests that the most sensitive species area to be affected by dust deposition at levels above 1000 mg/m²/day¹² which is five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans.</p> <p>Fugitive dust from quarry or soil recovery sites is typically deposited within 100-200m of the source; the greatest proportion of which, comprising larger particles (greater than 30 microns) is deposited within 100m¹³. 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,</p>	<p>WL1 – Hedgerows / WL2 – Treelines GS1 – Dry calcareous and neutral grassland</p>

¹² Farmer, A.M. (1993). *The Effects of Dust on Vegetation – A Review*. Environmental Pollution Vol.79, Issue 1, Pages 63-75.

¹³ Department of the Environment (1995). *The Environmental Effects of Dust from Surface Mineral Workings. Volume 1: Summary Report & Best Practice Guides*. HMSO.

Impact Source	Nature of Impact	Important Ecological Feature Potentially Affected
	<p>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>The zone of influence of the proposed development will extend up to 200m from the application site.</p>	
<p>Changes in water quality (ground and surface waters)</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>The potential zone of influence of the proposed development will be any feature downgradient of the groundwater flows and where any feature is a groundwater dependent ecosystem (GWDE), or where the groundwaters have hydraulic connectivity with any surface waters.</p>	<p>FL8 – Artificial lakes and ponds</p>

Assessment of Effects and Mitigation Measures

- 4.47 Table 4.12 details the assessment of predicted effects on the identified and relevant important ecological features from the proposed development and mitigation measures to prevent, reduce or offset any potential effects.

Table 4.12
Assessment of Effects on Identified Important Ecological Features and Mitigation Recommendations

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
WL1 - Hedgerows / WL2 - Treelines		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The proposed increase of permitted waste imported to the existing Inert Soil Recovery Facility at Huntstown Quarry and backfilling to allow the restoration of the North and West Quarries will not result in the direct loss, damage or fragmentation of any section <i>WL1 - hedgerow / WL2 - treeline</i>.</p>	Not significant
	<p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	N/A
Dust deposition	<p>Assessment of Effects: Dust levels are predicted to remain compliant with existing planning permission limit (Condition 7) and within DoEHLG¹⁴ and EPA¹⁵ guideline limit values of 350 mg/m²/day measured at the monitoring points on the boundaries of Huntstown Quarry. The hedgerows / treelines in the wider surrounding area have been subjected to the long-term effects of dust from quarrying and other activities associated with Huntstown Quarry with no evidence to indicate any significant negative effects upon these from the deposition of dust. The proposed increase of permitted waste imported is not anticipated to result in any significant increase in the rate or levels of dust deposition generated provided that current dust suppression techniques and 'housekeeping' measures continue to be implemented across the inert waste recovery facility and wider quarry complex, particularly those which seek to limit the amount of track-out by lorries.</p>	Not significant
	<p>Mitigation: No specific ecological mitigation is required over and above those measures required to comply with the likely conditional limits of any planning approval.</p>	N/A

¹⁴ DoEHLG (2004). *Quarries and Ancillary Activities – Guidelines for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin.

¹⁵ Environmental Protection Agency (2006). *Environmental Management Guidelines – Environmental Management in the Extractive Industry (Non-Scheduled Minerals)*. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford.

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
GS1 – Dry calcareous and neutral grassland		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The proposed increase of permitted waste imported to the existing licensed Inert Soil Recovery Facility at Huntstown Quarry and backfilling to allow the restoration of the West Quarry will not result in the direct loss, damage or fragmentation of any <i>GS1 – Dry calcareous and neutral grassland</i>.</p>	Not significant
	<p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	N/A
Dust deposition	<p>Assessment of Effects: The backfilling operations and traffic movements at the West Quarry is not predicted to generate dust that would be at levels where there would be any measurable impact on the species composition and structure of the <i>GS1 – Dry calcareous and neutral grassland</i> habitat which occurs to the south of the void to be infilled.</p>	Not significant
	<p>Mitigation: No specific ecological mitigation is required over and above those measures required to comply with the likely conditional limits of any planning approval.</p>	N/A
FL8 – Artificial ponds and lakes		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The proposed increase of permitted waste imported to the existing licensed Inert Soil Recovery Facility at Huntstown Quarry and backfilling to allow the restoration of the West Quarry will result in the direct loss of all the ponds / ponded areas that have formed on the quarry floor since the stripping of soils and overburden from this area.</p>	Slight impact at a Local (higher) level
	<p>Mitigation: It will not be possible to mitigate for the loss of the ponds in the West Quarry, but which would be lost in any case through any quarrying operations carried out as part of the extant planning consent covering this area.</p>	Slight impact at a Local (higher) level
Changes in water quality	<p>Assessment of Effects: The backfilling of the West Quarry will not require any groundwater dewatering operations in order to allow these operations to be carried out and most rainfall is expected to percolate into the underlying ground. There will therefore be minor, if any, contribution of water from the West Quarry to off-site discharges. The proposed increase of permitted waste imported to the waste recovery facility has the potential to</p>	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
	<p>increase the levels of suspended solids entering the water management system serving the North Quarry. However, as the ponds and lagoons forming part of the water management system provide the function of removing suspended solids. Roadstone currently complies with waste licence emission limits for water discharged from North Quarry, where recovery activities are ongoing. It is predicted that there will be no significant effects arising from the proposed increase in the rate of intake of waste soils and stone.</p> <p>It is considered that the groundwater and surface water at Huntstown Quarry are not interconnected. No changes are predicted in water quality at any pond that will be retained within the application site or those within the wider surrounding quarry complex through the planned increase in permitted soil waste intake to the recovery facility.</p> <p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	N/A
Irish Hare		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The proposed backfilling of the West Quarry will result in the direct loss of c.12ha of habitat used by Irish hare and potentially will cause some fragmentation between high quality habitat to the east and other areas of suitable habitat to the west of the void to be backfilled.</p> <p>Although the loss and fragmentation of habitat is unlikely to impact upon the overall status of the local Irish hare population, with any individuals anticipated to move from the West Quarry to other parts of Huntstown Quarry and within the wider surrounding area, it will affect distribution of this species at Huntstown Quarry in the medium term and until this part of the application site and the North Quarry are restored.</p> <p>Mitigation: The West Quarry to be progressively restored as part of any backfilling operations</p>	Slight impact at Local (higher) level Not significant
Disturbance from human activity, noise and vibration	<p>Assessment of Effects: Any Irish hares at Huntstown Quarry will be somewhat habituated by a certain degree of human disturbance generated by quarrying, waste recovery and other associated activities at this site. Specific noise emissions from activities at the quarry complex are compliant with existing planning permission limit (Condition 3). The proposed increase of permitted waste imported for backfilling and recovery at the existing facility is not anticipated to significantly increase the overall levels of disturbance where there would be any measureable effects on the local Irish hare population.</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.</p>	N/A
Bird Assemblage		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The proposed increase in the intake of permitted waste to the North Quarry will not result in any further loss of potential breeding habitat over and above that already consented. The loss of any rock faces and ledges used as nesting sites (primarily by jackdaws) over a shorter timeframe will be offset by the restoration of this part of the site on completion of backfilling operations. The loss of the 17.2ha of existing habitat in the West Quarry is not likely to affect the overall bird carrying capacity or the local population status of any bird species at Huntstown Quarry or in the wider surrounding area.</p> <p>Mitigation: Mitigation is required to ensure compliance with Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 prohibiting: their killing, injuring or taking; the damage, destruction or taking of nests in use or being built; and the taking or destruction of eggs. To avoid destruction of any such nests all trees/shrubs in the West Quarry where backfilling operations are proposed will be removed outside the breeding season (i.e. removal permitted from September through to February inclusive). All cut material will be chipped and the material removed from site to deter use by other species.</p>	Not significant
Disturbance from human activity, noise and vibration	<p>Assessment of Effects: All birds species at Huntstown Quarry will be somewhat habituated to a certain degree of disturbance from existing quarrying operations and other associated activities. Specific noise emissions from activities at the quarry complex are compliant with existing planning permission limit (Condition 3). The proposed increase of the permitted waste intake rate to the existing soil waste recovery facility is not anticipated to significantly increase the overall levels of disturbance over and above existing levels where there would be any measureable effects on the local bird assemblage.</p> <p>Mitigation: No specific ecological mitigation is required as impact is assessed as not significant.</p>	Not significant

Impact	Assessment of Effects	Significance of Impact Before and After Mitigation (Residual Impact)
Common Frog		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The continued backfilling of the North Quarry will not result in any loss of known potential breeding or terrestrial habitat used by common frogs. The previously approved backfilling of the West Quarry will result in the direct loss of breeding and terrestrial habitat used by common frog. In the absence of mitigation any operations within this area have the potential to cause the death or physical harm to individual animals and will impact upon the local population status of this species.</p>	Significant adverse impact at Lower (higher) level
	<p>Mitigation: Implementation of measures to capture and removal of individual animals from the West Quarry and their relocation to a suitable receptor site supporting both breeding and terrestrial habitat (i.e. viewing mound area to the east of the West Quarry), under an appropriate derogation licence issued by NPWS, prior to any backfilling operations take place in this area.</p>	Not significant
Smooth Newt		
Habitat loss, damage and fragmentation	<p>Assessment of Effects: The continued backfilling of the North Quarry will not result in any loss of any known potential breeding or any medium to high quality terrestrial habitat for smooth newts. The previously approved backfilling of the West Quarry will result in the direct loss of breeding and terrestrial habitat used by smooth newts. In the absence of mitigation any operations within this area have the potential to cause the death or physical harm to individual animals and will impact upon the local population status of this species.</p>	Significant adverse impact at County level
	<p>Mitigation: Implementation of measures to capture and removal of individual animals from the West Quarry and their relocation to a suitable receptor site supporting both breeding and terrestrial habitat (i.e. viewing mound area to the east of the West Quarry), under an appropriate derogation licence issued by NPWS, prior to any backfilling operations take place in this area.</p>	Not significant

Cumulative Impacts

- 4.48 Other than the recent grant of planning permission for an anaerobic digestion (AD) plant at the Huntstown quarry complex, there are no other known planning applications, activities or proposed activities at, or within close proximity to the application site that would be likely to result in any significant cumulative impacts on the ecology of the local area at this current time.
- 4.49 It is considered that the proposed development of the AD plant, were it to proceed on an area of previously disturbed ground (classified as spoil and bare ground) would have little or no impact on local ecology and consequently, it is determined that there no significant cumulative ecological impacts will arise.

ECOLOGICAL ENHANCEMENT AND COMPENSATION

- 4.50 Due to the size and nature of the development and through consideration of the mitigation measures incorporated into the scheme, it is concluded that all reasonable and practicable steps have been taken to avoid significant adverse effects upon important ecological features to minimise the residual impacts arising from the proposed increase in the permitted rate of waste intake to the soil and stone waste recovery facility at Huntstown Quarry. No further recommendations for ecological enhancement and/or compensation are deemed necessary as part of the development proposals or to ensure compliance with wildlife legislation.

ECOLOGICAL MONITORING

Smooth Newts

- 4.51 Following the relocation of smooth newts from the West Quarry to a suitable receptor site, population monitoring will be undertaken initially on an annual basis over at least a two year period at the receptor site. The results of the monitoring would be reported to NPWS and the Fingal County Council with all records sent to NBDC.
- 4.52 The monitoring programme will be based on undertaking at least two survey visits to the receptor site during the breeding season (i.e. March to mid-June) and suitable weather conditions to confirm, wherever practically possible, evidence of breeding activity and to estimate the population size class of smooth newt against the numbers of individuals relocated from the West Quarry.
- 4.53 During the smooth newt monitoring programme, all evidence of common frog will be recorded, including all direct counts of adults and number of spawn clumps to provide a population estimate for this species.

LEGAL AND POLICY IMPLICATIONS

- 4.54 This section summarises the significance of impacts in the context of statutory legislation and planning policy.

Legal Implications

- 4.55 The proposed scheme has no implications for any statutory designated nature conservation sites.
- 4.56 The only statutory protected species with relevance to the proposed increase in the permitted waste intake rate to the existing inert soil recovery facility at Huntstown Quarry are Irish hare, breeding birds, common frog and smooth newt.
- 4.57 Provided that appropriate mitigation strategies are properly implemented and all appropriate licences obtained where necessary, it will be possible for the increase in intake of waste soils and stone to occur without the risk of breaching current wildlife legislation.

Policy Implications

- 4.58 Provided that all appropriate mitigation measures to prevent, reduce or offset an impact are implemented, it is considered that the proposed increase in the rate of waste intake to the existing inert soil recovery facility at Huntstown Quarry will comply with the requirements of current national and local planning policies relating to ecology and nature conservation.

CONCLUSIONS

- 4.59 SLR Consulting Ireland conducted an Ecological Impact Assessment to inform the wider Environmental Impact Assessment process and production of an Environmental Impact Statement to accompany the planning and waste applications by Roadstone Limited for a proposed increase in the permitted rate of waste intake to the existing licensed inert soil recovery facility at Huntstown Quarry, Finglas, Dublin. The proposal is for an increase in the intake rate of waste soils and stone from a maximum of 750,000 tonnes per annum at present to 1,500,000 tonnes per annum in future years.
- 4.60 The application area covers 48.65ha, out of a total landholding of 201ha, and comprises the North and West Quarries which are part of a larger quarry complex at Huntstown Quarry.
- 4.61 The application site is not subject to any statutory or non-statutory nature designation and no such sites will be directly or indirectly impacted by the proposed increase in the rate of waste intake to the existing licensed inert soil recovery facility at Huntstown Quarry.
- 4.62 The proposed increase in the permitted waste intake rate to the soil recovery facility will not result in any loss of important habitats. There will be a loss of a number of ponds formed in the base of the West Quarry that are of Local (higher) value following the stripping of topsoils and overburden. However, due to extant planning consent for quarrying and backfilling operations in the West Quarry, these habitat areas would be otherwise lost through continuation of quarrying at this location and/or permitted backfilling. The impact of this previously permitted development is considered significant at a Local (higher) level.
- 4.63 The proposed increase in the waste intake rate to the existing licensed inert soil recovery facility at the North Quarry is not likely to have any implications on protected or important species.

- 4.64 The backfilling of the West Quarry will result in the direct loss of habitats supporting protected species including: Irish hare and common frog evaluated as being of Local (higher) value; and smooth newt at County value. However, through the implementation of appropriate mitigation measures, it is considered that the proposed increase in the permitted waste intake rate is not likely to have a significant impact on the local population status of these species.
- 4.65 A summary matrix of predicted impacts from the proposed increase of permitted waste imported to the existing licensed inert soil recovery facility at Huntstown Quarry is provided in Table 4.13.

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**Table 4.13
Summary Matrix of Predicted Impacts**

Value	Potential Impact	Direction	Probability	Magnitude	Duration	Frequency	Reversibility	Mitigation Measures	Residual Impact	Probability
FL8 – Artificial ponds and lakes										
Local (higher)	Direct loss of 15 semi-permanent and ephemeral ponds in the West Quarry	Negative	Certain	Slight	Permanent	Once	Irreversible	No mitigation proposed as these features would be lost in any case through extant planning consent for quarrying operations	Slight impact at a Local (higher) level	Certain
Irish Hare										
Local (higher)	Direct loss of c.12ha of habitat used by Irish hare in the West Quarry and fragmentation of habitat to the east and west of this area	Negative	Certain	Slight	Medium term	Once	Reversible	Progressive restoration of the West Quarry during the backfilling operations	Not significant	Probable
Common Frog										
Local (higher)	Direct loss of 1w.2ha of breeding and terrestrial habitat in the West Quarry	Negative	Certain	Significant	Permanent	Once	Irreversible	Capture and removal of individual animals from the West Quarry and their relocation to a suitable receptor site supporting both breeding and terrestrial habitat	Not significant	Certain
Smooth Newt										
County	Direct loss of 12.2ha of breeding and terrestrial habitat in the West Quarry	Negative	Certain	Significant	Permanent	Once	Irreversible	Capture and removal of individual animals from the West Quarry and their relocation to a suitable receptor site supporting both breeding and terrestrial habitat	Not significant	Certain

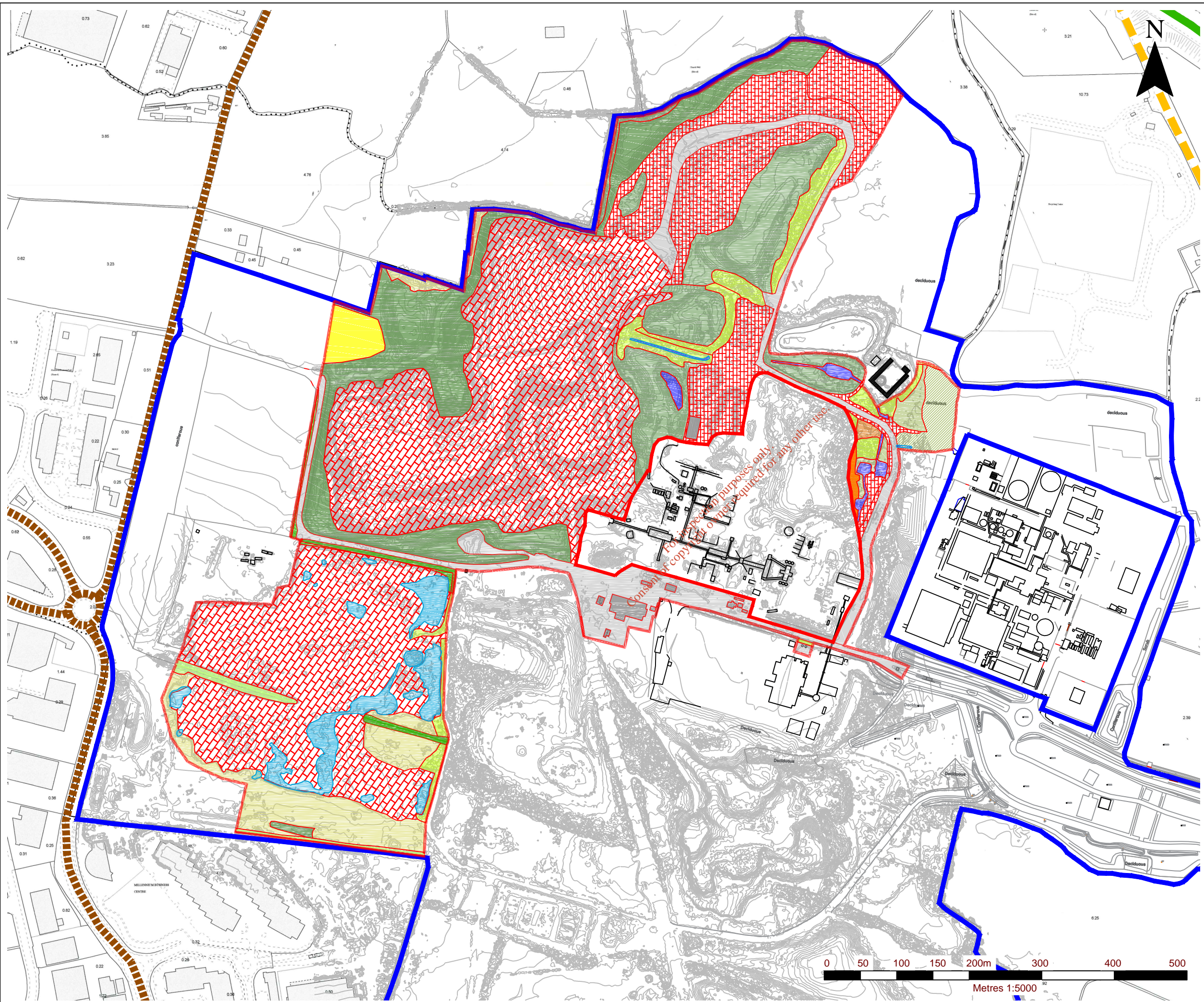
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FIGURES

Figure 4- 1
Habitat Plan

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NOTES

- EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.
- ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

- ROADSTONE LIMITED INTEREST (c. 200.3 ha)
- APPLICATION AREA (c. 48.65 ha)
- GS1 - DRY CALCAREOUS AND NATURAL GRASSLAND
- GS2 - DRY MEADOWS AND GRASSY VERGES
- WL1- HEDGEROWS
- WL2 - TREELINES
- BC1 - ARABLE CROPS
- ED4 - ACTIVE QUARRIES AND MINES
- FL8 - OTHER ARTIFICIAL LAKES AND PONDS
- BL3 - BUILDINGS AND ARTIFICIAL SURFACES
- WD1 - MIXED BROADLEAVED WOODLAND
- ED2 - SPOIL AND BARE GROUND
- WN5 - RIPARIAN WOODLAND
- WS1- SCRUB

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**ROADSTONE LIMITED
ENVIRONMENTAL IMPACT STATEMENT
HUNTSTOWN WASTE RECOVERY FACILITY
NORTH ROAD, FINGLAS, DUBLIN 11
HABITAT PLAN
FIGURE 4-1**

Scale 1:5,000 @ A3 Date AUGUST 2016

APPENDICES

APPENDICES

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APPENDIX 4-A

TARGET NOTES

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APPENDIX 4-A

Target Note	Description
TN1	<p>A species-poor unmanaged hedgerow dominated by common hawthorn (<i>Crataegus monogyna</i>) with some semi-mature ash (<i>Fraxinus excelsior</i>) and sycamore (<i>Acer pseudoplatanus</i>). Most of the ash trees are showing signs of severe stress with noticeable die-back in the canopy.</p> <p>Associated with the hedgerow are a narrow and shallow dry ditch (, a narrow road verge and a strip of land running along the top of the northern edge of the West Quarry supporting GS2 – <i>Dry Meadows and grassy verges</i> habitat.</p>
TN2	<p>A species-poor hedgerow dominated by beech (<i>Fagus sylvatica</i>) with some sycamore also present.</p> <p>Associated with the hedgerow was a roadside verge and bank with GS2 – <i>Dry meadows and grassy verges</i></p>
TN3	<p>An unmanaged species-poor hedgerow running along the part of the boundary of Huntstown Quarry dominated by semi-mature sycamore and ash, that expands out into a narrow scrub belt that includes some goat willow (<i>Salix caprea</i>).</p> <p>Associated with the hedgerow is a narrow and shallow drainage ditch that was generally heavily shaded by bankside trees and shrubs that excludes the presence of aquatic and marginal vegetation.</p>
TN4	<p>A species-poor hedgerow running along part of the boundary Huntstown Quarry dominated by semi-mature sycamore but with frequent elder and some semi-mature ash also present. Patches of bramble and elder extend out from the hedgerow to form a dense scrub belt.</p>
TN5	<p>A species-poor hedgerow running along part of the boundary of Huntstown Quarry dominated by semi-mature ash with some sycamore (semi-mature), common hawthorn, blackthorn (<i>Prunus spinosa</i>), elder and bramble also present.</p>
TN6	<p>A species-poor similar in species composition and structure to TN5.</p>
TN7	<p>A species-poor similar in species composition and structure to TN5.</p>
TN8	<p>A remnant hedgerow dominated by common hawthorn that has extended out to form a narrow scrub belt. Other woody species present include frequent elder and some butterfly-bush.</p>
TN9	<p>A tall remnant hedgerow dominated by semi-mature ash.</p>
TN10	<p>A small deep pond formed within a steep sided depression on a large soil mound. The southern shallower part of the pond supports a dense stand of reedmace that also forms a narrow fringe of vegetation around the rest of the pond along with some hard rush. The only other aquatic species recorded was common duckweed (<i>Lemna minor</i>) forming small floating clumps of vegetation in amongst the reedmace.</p> <p>The steeply sloping banks are dominated by scrub consisting predominantly of common hawthorn and goat willow.</p> <p>Smooth newts have historically been recorded at this pond.</p>
TN11	<p>A species-poor hedgerow dominated by semi-mature ash and common hawthorn with some sycamore also present.</p>
TN12	<p>A remnant species-poor hedgerow dominated by common hawthorn with some ash, blackthorn, goat willow and elder also present. The ground flora is dominated by ivy (<i>Hedera helix</i>) with some cow parsley, bush vetch and hairy brome (<i>Bromus ramosus</i>).</p>

APPENDIX 4-A

Target Note	Description
TN13	A mature hedgerow along a narrow strip extending out into the West Quarry where soils and overburden have been stripped. The treeline is dominated by sycamore and ash with some common hawthorn, blackthorn, dog-rose (<i>Rosa canina</i> agg.) and bramble also present.
TN14	Mature ash dominated hedgerow with common hawthorn and dog-rose also present.
TN15	An ephemeral pond supporting rigid hornwort (<i>Ceratophyllum demersum</i>), broad-leaved pondweed (<i>Potamogeton natans</i>), horned pondweed (<i>Zannichellia palustris</i>) and emergent common spike-rush (<i>Eleocharis palustris</i>) and reedmace with some jointed rush, hard rush and lesser spearwort (<i>Ranunculus flammula</i>) and willows (<i>Salix</i> spp.) around its margins. Male and female smooth newts recorded within the pond.
TN16	A deep small permanent pond supporting no vegetation. A solitary male smooth newt recorded as present as well as common frog tadpoles.
TN17	A deep small permanent pond supporting no vegetation.
TN18	A relatively large semi-permanent pond with dense vegetation in places consisting of all the species found at TN15 with the addition of water horsetail (<i>Equisetum fluviatile</i>) and pond water-crowfoot (<i>Ranunculus peltatus</i>). Common frog tadpoles were recorded.
TN19	A small ephemeral pond dominated by common spike-rush with some pond lesser spearwort, water-crowfoot reedmace and horned pondweed present. One female smooth newt recorded with a juvenile male and three adult common frogs found under a sheet of plyboard on land immediately adjacent the pond.
TN20	An ephemeral pond (dry at the time of the survey) supporting common spike-rush, hard rush and lesser spearwort.
TN21	A small ephemeral pond used by horses for drinking purposed supporting a stand of reedmace.
TN22	A small ephemeral pond (dry) with some stands of common spike-rush and reedmace.
TN23	A semi-permanent pond supporting dense stands of common spike-rush and reedmace. One female smooth newt recorded along with common frog tadpoles.
TN24	An ephemeral pond (dry) dominated by common spike-rush with some stands of reedmace also developing.
TN25	A small ephemeral pool (near complete drawdown at time of survey) supporting common spike-rush and hard rush.
TN26	A small ephemeral pond (dry) supporting stands of common reed (<i>Phragmites australis</i>) and reedmace.
TN27	An ephemeral pond (dry) supporting hard rush and some reedmace.
TN28	A semi-permanent pond supporting some water plantain (<i>Alisma plantago-aquatica</i>), rigid hornwort, common spike-rush, hard rush and reedmace.
TN29	An ephemeral pond but with supporting rigid hornwort and common spike-rush. Common frog tadpoles were recorded.

APPENDIX 4-B
HEDGEROW APPRAISAL

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HEDGEROW APPRAISAL

Ref	Historical (a)	Species Diversity per 30m Section (b)	Structure, Construction & Associated Features (c)	Habitat Connectivity (d)	Landscape (e)	Overall Assessed Significance
TN1	Score = 3 On 1 st Ed. OS Maps	Score = 0 Hawthorn, ash and sycamore	Score = 2 Dry ditch	Score = 0 No connectivity	Score = 0	Low
TN2	Score = 0 Recently established	Score = 0 Beech and sycamore	Score = 0 None	Score = 0 No connectivity	Score = 0	Low
TN3	Score = 3 On 1 st Ed. OS Maps	Score = 0 Sycamore and ash	Score = 2 Dry ditch	Score = 2 Multiple links with other hedgerows	Score = 0	Low
TN4	Score = 3 On 1 st Ed. OS Maps	Score = 0 Sycamore, ash and elder	Score = 0 None	Score = 2 Multiple links with other hedgerows	Score = 0	Low
TN5	Score = 4 Townland boundary	Score = 1 Ash, sycamore, hawthorn, blackthorn and elder	Score = 0 None	Score = 2 Multiple links with other hedgerows	Score = 0	High (a = 4)
TN6	Score = 3 On 1 st Ed. OS Maps	Score = 1 Ash, sycamore, hawthorn, blackthorn and elder	Score = 0 None	Score = 2 Multiple links with other hedgerows	Score = 0	Low

APPENDIX 4-B

Ref	Historical (a)	Species Diversity per 30m Section (b)	Structure, Construction & Associated Features (c)	Habitat Connectivity (d)	Landscape (e)	Overall Assessed Significance
TN7	Score = 1 Internal Field Boundary	Score = 1 Ash, sycamore, hawthorn, blackthorn and elder	Score = 0 None	Score = 2 Multiple links with other hedgerows	Score = 0	Low
TN8	Score = 1 Internal Field Boundary	Score = 0 Hawthorn and elder	Score = 0 None	Score = 2 Multiple links with other hedgerows	Score = 0	Low
TN9	Score = 4 Townland boundary (remnant)	Score = 0 Ash	Score = 0 None	Score = 0 No connectivity	Score = 0	High (a = 4)
TN11	Score = 4 Townland boundary	Score = 0 Sycamore, ash and hawthorn	Score = 0 None	Score = 2 Multiple links with other hedgerows	Score = 0	High (a = 4)
TN12	Score = 3 On 1 st Ed. OS Maps	Score = 1 Ash, hawthorn, blackthorn, goat willow and elder	Score = 0 None	Score = 0 No connectivity	Score = 0	Low
TN13	Score = 3 On 1 st Ed. OS Maps	Score 1 Sycamore, ash, hawthorn, dog-rose	Score = 0 None	Score = 0 No connectivity	Score = 0	Low

APPENDIX 4-B

Ref	Historical (a)	Species Diversity per 30m Section (b)	Structure, Construction & Associated Features (c)	Habitat Connectivity (d)	Landscape (e)	Overall Assessed Significance
TN14	Score = 4 Townland boundary	Score 0 Ash, hawthorn, dog- rose	Score = 0 Sycamore, ash and hawthorn	Score = 1 Single link with another hedgerow	Score = 0	High (a = 4)

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APPENDIX 4-C
BREEDING BIRD SURVEY REPORT 2015

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**Huntstown Quarry
Inert Waste Recovery Facility
Finglas, Dublin 11**

Breeding Bird Survey 2015

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SLR Ref: 501.00180.00111

June 2015

Version No: 1

ision

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- Drawing 1 Site Location
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1.0 INTRODUCTION

1.1 Background

This report presents the results of the 2015 breeding bird survey conducted at the site of the planned Inert Waste Recovery Facility at Huntstown Quarry, Finglas, Dublin 11.

It has been prepared by SLR Consulting Ireland (SLR) on behalf of Roadstone Limited in pursuant of Condition 6.14 of Waste Licence Ref. No W0277-01 issued by the Environmental Protection Agency (EPA, or *'the Agency'*) under Section 40(1) of the Waste Management Act 1996 (as amended) on 11th February 2015. The waste licence provides for recovery of inert soil and stones through deposition on land at the former North Quarry within the Huntstown Quarry complex.

Condition 6.14 of Waste Licence W0277-01 states:

"The licensee shall carry out an annual breeding bird survey, unless otherwise required by the Agency. The survey shall record the number of birds of conservation concern utilising the site. The results of this assessment shall be reported as part of the Annual Environmental Report.

1.2 Aims and Objectives

The aim of the survey undertaken at the waste recovery facility is to provide information on the status of breeding birds at this site in accordance with Condition 6.14 of Waste Licence W0277-01.

The objectives of the survey are as following:

- to provide data on the activity levels of birds of conservation concern utilising the site;
- to provide data on the assemblage of species present within and immediately adjacent to the site; and
- to evaluate the number of pairs of target species breeding within and immediately adjacent to the site.

2.0 SITE DESCRIPTION

Huntstown Quarry is a large operational limestone quarry that has been worked since the early 1970s. The quarry complex comprises

- four main extraction areas (i.e. north quarry, central quarry, south quarry and western quarry);
- a central area that holds ancillary infrastructure servicing the quarrying operations (including offices, workshops and concrete and asphalt production plants);
- main access road and internal haul routes;
- remnant former fields and
- areas of overburden stripped from the extraction areas and used in construction of perimeter screening bunds.

The Huntstown Inert Waste Recovery Facility is located in the northern part of the Huntstown Quarry complex, covering an area of approximately 33.8 hectares (ha) out of a total landholding of 211 ha. The site comprises the worked out North Quarry and associated perimeter screening and overburden mounds.

The site comprises a mosaic of habitats including

- exposed calcareous rock faces;
- areas of open standing water formed on the floor of the quarry;
- dry grassland and
- re-colonising bare ground.

The surrounding land-use is a mixture of urban and commercial development, with associated infrastructure including the M50 Motorway, Dublin Airport and mixed agricultural land with fields often bounded by hedgerows. The landscape is typical of a rural-urban fringe.

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3.0 METHODOLOGY

3.1 Study Area

The study area for the breeding bird survey was the site of the Huntstown Inert Waste Recovery Facility (36.1 ha) and the immediate surrounding area extending up to 100m from the boundary of the site (Figure 1).

3.2 Target Species

Target species are considered to include any species as listed under Annex I of Council Directive 2009/147/EC on the Conservation of Wild Birds (The Birds Directive); any red listed¹ and/or amber listed² Birds of Conservation Concern in Ireland (BoCCI).

3.3 Walkover Survey

Walkover surveys, based on the *Common Bird Census* methodology³, were undertaken by an experienced ecologist from SLR on 19th March 2015 and 19th May 2015.

During each survey visit, the entire study area was walked, approaching to within at least 50m of all points to ensure adequate coverage, but at the same time being careful to avoid double-counting. All bird registrations, and their behaviours, were recorded on field maps using standard British Trust for Ornithology (BTO) codes.

Where possible, estimates were made of the number of breeding territories of target species based on the following:

- a nest, eggs or young were located;
- they were observed displaying or singing in suitable breeding habitat,
- birds were observed in territory disputes, or
- birds were recorded in the same location during each survey visit.

Other records were considered to be of non-breeding birds, i.e. feeding or on passage to other areas.

3.4 Survey Dates, Times and Weather Conditions

All survey visits were carried out during the bird breeding season and in good weather conditions. Details of survey dates, times and weather conditions are provided in Table 1.

Table 1: Survey Dates, Times and Weather Conditions

Date	Start Time	Duration (hrs)	Cloud Cover	Wind Direction	Wind Speed	Temp (°C)	Precipitation
19/03/2015	11:30	2	7/8 - 8/8	W	2	12	None
19/05/2015	12:00	2	6/8	NW	2 - 5	13	None

¹ 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.

² 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.

³ Gilbert, G., Gibbons, D.W. & Evans, J. (1998) *Bird Monitoring Methods*. RSPB, Sandy, Bedfordshire.

3.5 Survey Limitations

The entire site was accessible without restriction and no limitations to the survey were encountered.

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4.0 RESULTS

4.1 Walkover Surveys

During the walkover surveys, a total of twenty-four bird species were recorded during the breeding bird survey at the site of the planned Inert Waste Recovery Facility at Huntstown and in the area immediately surrounding it, including six target species.

During each survey visit most species occurred in relatively low numbers, with the exception of jackdaw (*Corvus monedula*) that was by far the most abundant species recorded in the study area. A full list of species recorded and notes on their occurrence is presented in Appendix A.

4.2 Target Species

Of the six target species recorded during the 2015 survey, it is considered that only meadow pipit (*Anthus pratensis*) is likely to have bred within the site of the planned Waste Recovery Facility.

Table 2 presents a summary of the six target species recorded during the survey visits, with full details for each individual species presented in Appendix A. Figure 2 illustrates the location where these species were recorded and approximate territories for the relevant species where appropriate.

Table 2: Species of Conservation Concern

Species	Conservation Status	Status within the Developable Area
Goldcrest	Amber List	Solitary individual calling in south west corner of quarry void. No evidence to suggest breeding at the site.
Herring Gull	Red List	A solitary individual recorded in flight over the southern part of the site. No evidence to suggest breeding at the site.
Lesser Black-backed Gull	Amber List	Recorded in flight over the southern part of the site. No evidence to suggest breeding at the site.
Meadow Pipit	Red List	Recorded in the northern part of the site along overburden storage areas supporting dry grassland where they are likely to have bred.
Starling	Amber List	Recorded within the wider surrounding area with a maximum flock of five recorded feeding in a field under permanent pasture to the east of the site. Likely to be breeding within wider surrounding area.
Swallow	Amber List	Recorded in flight over ponded areas in the quarry void. No evidence to suggest breeding at the site.

5.0 SUMMARY AND CONCLUSIONS

The 2015 breeding bird survey conducted by SLR at the site of the planned Inert Waste Recovery Facility at Huntstown North Quarry recorded a total of 24 species of birds at and within the site and the area immediately surrounding it.

The majority of species either occurred in numbers that were not significant at the regional or local level and/or are species of low or no conservation concern.

However the site was found to support six species of conservation concern and which were identified as target species. Of these species only meadow pipit is likely to breed on the site where suitable habitat exists particularly in the northern part of the site, where dry grassland is present.

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6.0 CLOSURE

This report has been prepared by SLR Consulting Ireland (SLR) with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the Client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

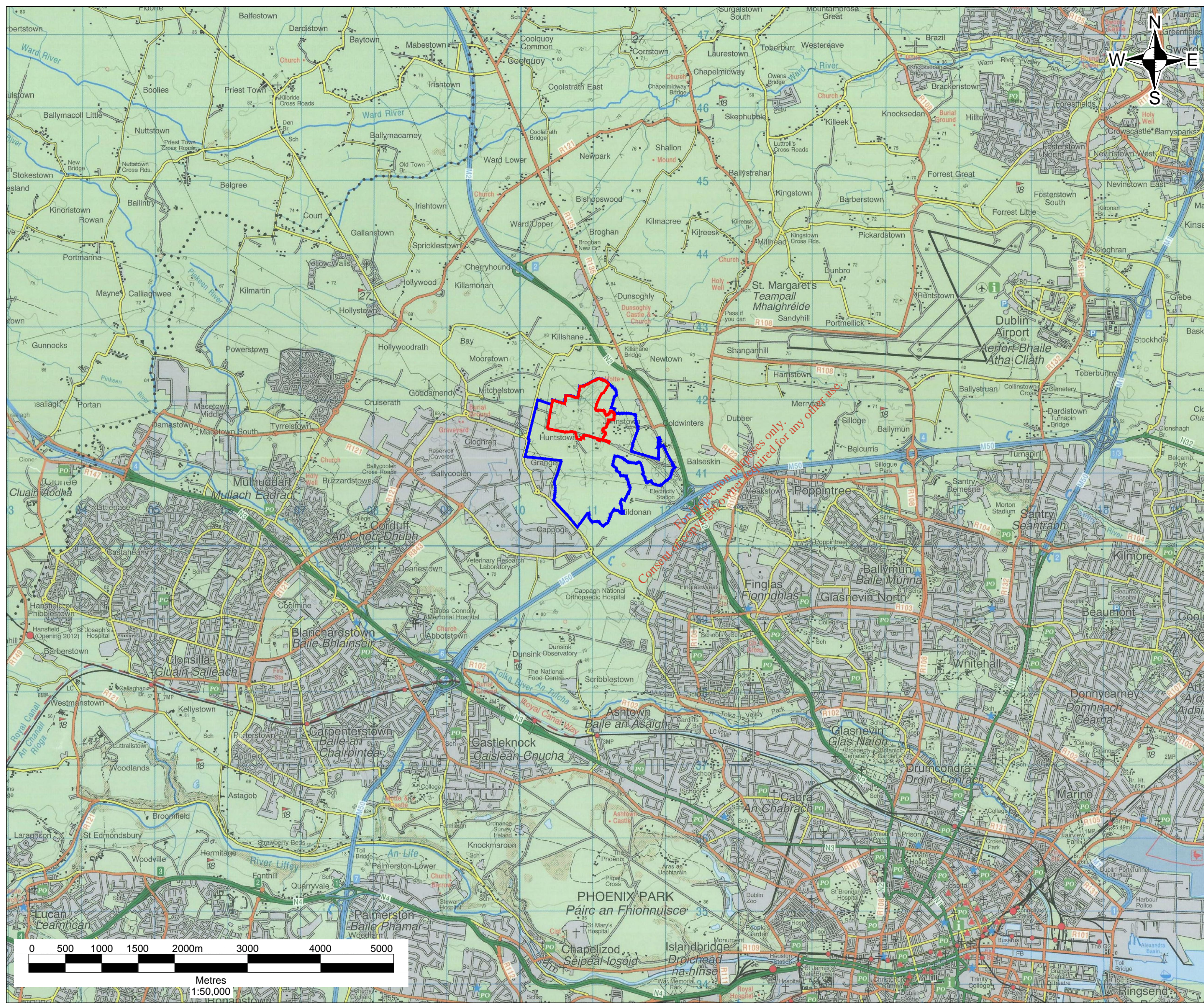
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0180.001111.18.FIG_1.0.Site Location Plan.dwg



- NOTES**
1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 50
 2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000715 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

-  ROADSTONE LTD. LANDHOLDING (c. 201.8 ha)
-  INERT WASTE RECOVERY FACILITY AREA (c. 36.1 ha)

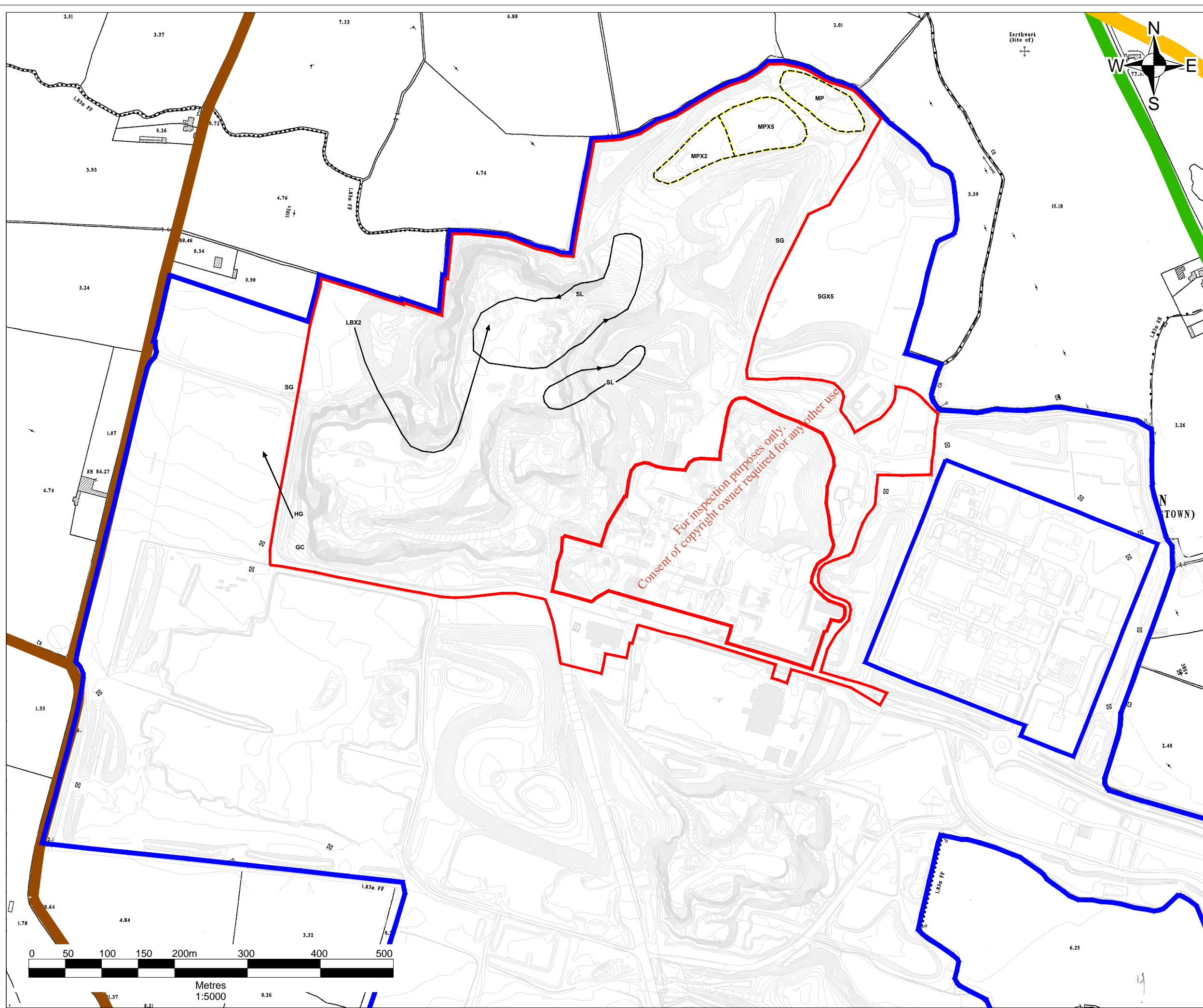
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ROADSTONE LIMITED
BREEDING BIRD SURVEY 2015
HUNTSTOWN QUARRY, NORTH ROAD,
FINGLAS, DUBLIN 11
SITE LOCATION PLAN

FIGURE 1

Scale 1:50,000 @ A3 Date JUNE 2015

0180.00111.18.FIG_2.0.Breeding Bird Survey 2015.dwg



NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B
2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000715 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND
3. TOPOGRAPHIC SURVEY PREPARED BY FUGRO BKS BASED ON MAY 2009 AERIAL PHOTOGRAPHY

LEGEND

	ROADSTONE LTD. LANDHOLDING (c. 201.8 ha)
	INERT WASTE RECOVERY FACILITY AREA (c. 36.1 ha)
SG	STARLING
GC	GOLDCREST
HG	HERRING GULL
TB	LESSER BLACK-BACKED GULL
MP	MEADOW PIPIT
SL	SWALLOW
	FLIGHT LINES
	TERRITORIES

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**ROADSTONE LIMITED
BREEDING BIRD SURVEY 2015**

HUNTSTOWN QUARRY, NORTH ROAD,
FINGLAS, DUBLIN 11

**TARGET SPECIES DISTRIBUTION
AND TERRITORIES**

FIGURE 2

Scale 1:5,000 @ A3 Date JUNE 2015

Species List

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APPENDIX A

Common Name	Scientific Name	Status	Total Counts		Notes
			Mar	May	
Blackbird	<i>Turdus merula</i>	Green List	5	2	Recorded throughout study area and likely to have bred at and within the wider surrounding area of this site.
Blue Tit	<i>Cyanistes caeruleus</i>	Green List	4	-	Recorded predominantly in the hedgerows and scrub along the western boundary of the site where it is likely have bred.
Buzzard	<i>Buteo buteo</i>	Green List	-	1	A solitary recently fledged young observed on top of rock face in south west corner of quarry void after being mobbed by gulls. Likely to have bred in close proximity to where recorded.
Chaffinch	<i>Fringilla coelebs</i>	Green List	-	2	Infrequently recorded in the hedgerows along the northern boundary of the site where it is likely to have bred.
Collard Dove	<i>Streptopelia decaocto</i>	Green List	1	-	A solitary individual recorded in western part of site. No evidence to suggest breeding at the site.
Dunnock	<i>Prunella modularis</i>	Green List	2	-	Infrequently recorded in scrub on overburden storage areas in the north east of the site where it is likely to have bred.
Garden Warbler	<i>Sylvia borin</i>	Green List	1	1	Solitary individuals recorded in the hedgerow along the north western boundary of the site where it is likely to have bred.
Goldcrest	<i>Regulus regulus</i>	Amber List	-	1	Solitary individual calling in south west corner of quarry void. No evidence to suggest breeding at the site.
Goldfinch	<i>Carduelis carduelis</i>	Green List	1	2	Infrequently recorded as individuals. Likely to have bred in the wider surrounding area.
Great Tit	<i>Parus major</i>	Green List	3	1	Infrequently recorded along the boundaries of the site. Likely to have bred along the boundaries of the site and within the wider surrounding area.

APPENDIX A

Common Name	Scientific Name	Status	Total Counts		Notes
			Mar	May	
Heron	<i>Ardea cinerea</i>	Green List	-	1	Observed in flight over ponded area in south of quarry pond. No evidence to suggest breeding at this site.
Herring Gull	<i>Larus argentatus</i>	Red List	-	1	A solitary individual recorded in flight over the southern part of the site. No evidence to suggest breeding at the site.
Hooded Crow	<i>Corvus cornix</i>	Green List	7	1	Regularly recorded feeding at the site. No evidence to suggest breeding at the site.
Jackdaw	<i>Corvus monedula</i>	Green List	49	35	Regularly recorded in and around the quarry void in small flocks up to 10 birds. Considered likely to be using the rock faces for breeding.
Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber List	-	2	Recorded in flight over the southern part of the site. No evidence to suggest breeding at the site.
Magpie	<i>Pica pica</i>	Green List	-	4	Recorded in the northern part of the site and in the wider surrounding area. Likely to have bred at the site and in the wider surrounding area.
Meadow Pipit	<i>Anthus pratensis</i>	Red List	9	1	Recorded in the northern part of the site along overburden storage areas supporting dry grassland where they are likely to have bred.
Pied Wagtail	<i>Motacilla alba</i>	Green List	-	1	A solitary individual recorded around the disturbed margins of a field pond to the east of the site. No evidence to suggest breeding at the site.
Robin	<i>Erithacus rubecula</i>	Green List	9	5	Recorded throughout the site where it is likely to have bred.
Rook	<i>Corvus frugilegus</i>	Green List	-	10	All birds recorded in one flock feeding on an adjacent field under permanent pasture. No evidence to suggest breeding at the site.

APPENDIX A

Common Name	Scientific Name	Status	Total Counts		Notes
			Mar	May	
Starling	<i>Sturnus vulgaris</i>	Amber List	2	5	Recorded within the wider surrounding area with a maximum flock of five recorded feeding in a field under permanent pasture to the east of the site. Likely to be breeding within wider surrounding area.
Swallow	<i>Hirundo rustica</i>	Amber List	-	2	Recorded in flight over ponded areas in the quarry void. No evidence to suggest breeding at the site.
Woodpigeon	<i>Columba palumbus</i>	Green List	5	5	Recorded generally in flight over site. Likely to be breeding in wider surrounding area.
Wren	<i>Troglodytes troglodytes</i>	Green List	7	4	Regularly recorded throughout the site and considered likely to have bred within the site and wider surrounding area.

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