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INTRODUCTION

Background

4.1 This chapter provides a summary of the Ecological Impact Assessment (EclA) conducted by SLR Consulting Ireland (SLR) to inform the wider Environmental Impact Assessment (EIA) process and the production of an Environmental Impact Statement (EIS) to accompany a Waste Licence Application (WLA) for a proposed Inert Soil Recovery Facility by Roadstone Wood Limited at Huntstown Quarry, Finglas, Dublin.

Purpose of the Ecological Impact Assessment

4.2 An EclA can be considered as having three main purposes:

- to provide an objective and transparent assessment of the ecological effects of a proposed development or activity;
- to permit objective and transparent determination of the consequences of the proposals in terms of national, regional and local policies relevant to nature conservation; and
- to demonstrate that a proposed development or activity will meet the legal requirements relating to habitats and species.

4.3 This EclA has been undertaken in accordance with the Environmental Protection Agency's (EPA) guidelines^{1 2} and guidelines published by the Institute of Ecology and Environmental Management (IEEM)³ ('the IEEM Guidelines') and follows a standard approach based upon

- the description of the existing baseline conditions within the application site;
- an evaluation of the habitats and species present within the application site;
- the identification of potential ecological effects of the proposed development of an inert soil recovery facility; and
- an assessment of the likely significance of identified impacts on the valued ecological receptors (VERs) both within the application site and within the zone of influence of the proposed development.

Where a significant negative impact has been identified, suitable mitigation measures to prevent, reduce or offset the level of impact are provided with any residual effects (following implementation of mitigation and enhancement measures) identified and assessed.

Legislative Context

4.4 The following legislation is of relevance to the ecology of the application site:

¹ Environmental Protection Agency (2002). *Guidelines on the Information to be Contained in Environmental Impact Statements*. Environmental Protection Agency, Dublin.

² Environmental Protection Agency (2003). *Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements)*. Environmental Protection Agency, Dublin.

³ Institute of Ecology and Environmental Management (2006). *Guidelines for Ecological Impact Assessment in the United Kingdom*.

- European Communities (Natural Habitats) Regulation 1997 (as amended);
- The Wildlife Act 1976;
- The Wildlife (Amendment) Act 2000; and
- Flora Protection Order 1999.

RECEIVING ENVIRONMENT

4.5 This section provides a general overview of the existing ecological baseline conditions within the application site and in the wider local environment.

Methodology

Establishment of Baseline Conditions

- 4.6 Baseline ecological data were collated through a combination of desk-based study and field survey, consistent with current standard methodologies and published good practice guidelines.
- 4.7 The area of study included all land within the application boundary for the proposed inert soil recovery facility (delineated by the red line on Figure 4-1 and hereinafter referred to as the 'application site'), as well as important ecological sensitive receptors in the vicinity with the potential to be directly or indirectly affected by the proposed development.

Desk-based Study

- 4.8 A preliminary desk-based study was undertaken, involving collation of data from a number of organisations and examining published data relating to the application site and within a defined search area centred on it. Data included details of statutory and non-statutory designated nature conservation sites and protected and notable species within a 2km radius of the site.
- 4.9 Data sources used included information held by the National Parks and Wildlife Service (NPWS) (www.npws.ie) including its interactive mapping facility (www.designatedareas.ie) and the National Biodiversity Data Centre (NBDC) (www.biodiversityireland.ie).

Field Survey

- 4.10 The scope of the ecological field surveys was defined on the basis of known and potential ecological interest within the application site and best practice⁴. Specialist surveys were carried out during 2010 for habitats and for the collection of data on the presence of, and/or the habitat potential for, protected species of fauna.

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

Habitat and Vegetation Survey

- 4.11 An extended Phase 1 Habitat Survey was conducted on the proposed application site on 8th March 2010 and repeated on 8th July 2010 by a senior ecologist from SLR. The survey was conducted following a standard methodology⁵ and involved the production of a map of the habitats present using colour codes and target notes (TN) to describe any feature of particular ecological interest. The results of this were further adapted to the scheme for identifying, describing and classifying Habitats in Ireland⁶ to Level 3.
- 4.12 This survey method was extended to include the recording of additional information on habitats and species, including any evidence of, or potential presence of, statutorily protected species, other species of conservation significance, or any other features of note and that may require mitigation or an ecologically sensitive design in respect of the proposed inert soil recovery facility at this site.

Survey Limitations

- 4.13 The extended Phase 1 Habitat Survey was conducted in March and repeated in July, which are considered to be an optimum times to undertake such surveys in order to record spring and summer species of flora. It is considered therefore that the survey results are representative of the habitats within the application site, and include the dominant and characteristic species of flora.
- 4.14 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 survey results accurately represent the baseline value of the study area for protected and notable species at the current time.

General Site Description

- 4.15 The application site lies in the northern part of the larger Huntstown Quarry Complex. The site covers an area of approximately 33.8 hectares (ha) and comprises a former worked limestone quarry void and associated perimeter screening and overburden mounds, typically supporting grassland communities, and industrial areas consisting of a variety of buildings, structures and hardstanding areas forming part of the existing ancillary site infrastructure for the quarrying operations as well as for the production of concrete and asphalt.
- 4.16 The northern extent of the former quarry has been infilled with inert materials forming part of the quarry restoration works but generally these areas support little vegetation except for some pioneer and early colonising plants.

⁵ Nature Conservancy Council (1990). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit, 2003 reprint*. JNCC, Peterborough.

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

Nature Conservation Sites

4.17 The proposed application site is not subject to any statutory nature conservation designation and there are no such sites within a 2km radius of the application site.

Habitats




4.18 The habitat types recorded on the application site based on the classification as defined by Habitats in Ireland are presented in Table 4.1 below.

Table 4-1 : Summary of Habitat Types Recorded on Application Site




Level 1 Habitat Hierarchy	Level 2 Habitat Hierarchy	Level 3 Habitat Hierarchy	Total Extent
Woodland & Scrub	WS – Scrub/transitional woodland	WS1 – Scrub	1.63 ha
	WL – Linear woodland/scrub	WL1 – Hedgerows	2003 m
Grassland & Marsh	GA- Improved grassland	GA1 – Improved agricultural grassland	0.78 ha
	GS – Semi-natural grassland	GS1 – Dry calcareous and neutral grassland	0.07 ha
		GS2 – Dry meadows and grassy verges	7.14 ha
	GM – Freshwater marsh	GM1 – Marsh	<0.01 ha
Freshwater	FL – Lakes and ponds	FL8 – Other artificial lakes and ponds	0.04 ha
	FW – Watercourses	FW4 - Drainage ditches	290m
	FS – Swamps	FS1 – Reed and large sedge swamps	0.01 ha
		FS2 – Tall-herb swamps	0.08 ha
E - Exposed rock and disturbed ground	ER – Exposed rock	ER2 – Exposed calcareous rock	14.00 ha
		ED2 – Spoil and bare ground	0.79 ha
	ED3 – Recolonising bare ground	4.75 ha	
B - Cultivated and built land	BC - Cultivated land	BC1 – Arable crops	0.74 ha
	BL - Buildings and artificial surfaces	BL3 – Buildings and artificial surfaces	3.39 ha

4.19 Figure 4-1 shows the location and extent of the habitats recorded within the application site along with the location of associated Target Notes (TN). A full description of each TN is provided in Table 4.2 overleaf.






Table 4-2 : Target Notes

Target Note	Description
<p>TN1</p> 	<p>A species-poor unmanaged 5m high 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 ditch and a 1m wide strip of grassland forming the roadside verge.</p> <p>The ditch has a mean channel width of 0.5m at normal water level and banks up to 1.5m in height at an angle of 45°. The ditch was dry at the time of the survey and was found not to support any aquatic or marginal vegetation. Its banks were typically dominated by ivy (<i>Hedera helix</i>) that extended up most of the trunks of the trees in the hedgerow.</p> <p>The 1m wide verge supports rank species-poor neutral grassland that shows evidence of some disturbance with a sward comprised of false oat-grass (<i>Arrhenatherum elatius</i>), cock's-foot (<i>Dactylis glomerata</i>), Yorkshire-fog (<i>Holcus lanatus</i>) and Italian rye-grass (<i>Lolium multiflorum</i>).</p> <p>The herb component consists of creeping thistle (<i>Cirsium arvense</i>), hogweed (<i>Heracleum sphondylium</i>); meadow vetchling (<i>Lathyrus pratensis</i>), ribwort plantain (<i>Plantago lanceolata</i>), creeping buttercup (<i>Ranunculus repens</i>); bramble (<i>Rubus fruticosus</i> agg.), common ragwort (<i>Senecio jacobaea</i>), red clover (<i>Trifolium pratense</i>), white clover (<i>Trifolium repens</i>), colt's-foot (<i>Tussilago farfara</i>) and germander speedwell (<i>Veronica chamaedrys</i>) as well as a solitary spike of pyramidal orchid (<i>Anacamptis pyramidalis</i>).</p>
<p>TN2</p> 	<p>A species-poor 3m high hedgerow dominated by beech (<i>Fagus sylvatica</i>) with some sycamore also present.</p> <p>Associated with the hedgerow is a 2m wide roadside verge with a rank sward dominated by false oat-grass with cock's-foot Yorkshire-fog and rough meadow-grass (<i>Poa trivialis</i>) also present. The species-poor herb component includes creeping thistle, hogweed, meadow vetchling, autumn hawkbit (<i>Leontodon autumnalis</i>), ribwort plantain, creeping cinquefoil (<i>Potentilla reptans</i>), bramble, broad-leaved dock (<i>Rumex obtusifolius</i>), common ragwort, dandelion (<i>Taraxacum officinale</i> agg.), white clover, common nettle (<i>Urtica dioica</i>), tufted vetch (<i>Vicia cracca</i>) and bush vetch (<i>Vicia sepium</i>).</p>
<p>TN3</p> 	<p>A 2m high hawthorn dominated hedgerow and associated verge that is similar in species composition to the verge describe in TN2 but covers a bank that rises up to 3m in height.</p>




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Target Note	Description
<p>TN4</p> 	<p>A 1m high bund supporting vegetation associated with recolonising bare ground but developing into a neutral grassland community. Colt's-foot is locally frequent but the grasses of false oat-grass, cock's-foot and Yorkshire-fog are beginning to form a conspicuous component of the vegetation. Other herbs present include creeping thistle, broad-leaved dock, common ragwort, red clover and common nettle. Some scrub development is evident including some shrubs of common hawthorn and elder as well as small patches of bramble.</p>
<p>TN5</p> 	<p>Small patch of dense scrub consisting of semi-mature sycamore with some common hawthorn, hazel (<i>Corylus avellana</i>) and dense bramble.</p>
<p>TN6 No Photograph Available</p>	<p>A 6m high unmanaged hedgerow running along the part of the boundary of quarry and application site dominated by semi-mature sycamore and ash (<i>Fraxinus excelsior</i>) that expands out into a narrow scrub belt that includes some goat willow (<i>Salix caprea</i>). Associated with the hedgerow is a narrow and shallow drainage ditch that is generally heavily shaded by bankside trees and shrubs that excludes the presence of aquatic and marginal vegetation.</p>
<p>TN7</p> 	<p>Large spoil mound located on the western side of the application site dominated by rank neutral grassland with some scattered scrub across that mound but which becomes more frequent and dense along its lower slopes. The sward is dominated by false oat-grass with cock's-foot, red fescue (<i>Festuca rubra</i> agg.) and Yorkshire-fog with glaucous sedge (<i>Carex flacca</i>), common sedge (<i>Carex nigra</i>), compact rush (<i>Juncus conglomeratus</i>) and hard rush (<i>Juncus inflexus</i>) present in damper areas. The herbs component of the sward include rosebay willowherb (<i>Chamerion angustifolium</i>), creeping thistle, hogweed, autumn hawkbit, black medick (<i>Medicago lupulina</i>), ribwort plantain, creeping cinquefoil, cowslip (<i>Primula veris</i>), selfheal (<i>Prunella vulgaris</i>), common comfrey (<i>Symphytum officinale</i>), red clover, white clover and colt's-foot. Other species present in the sward include field horsetail (<i>Equisetum arvense</i>) and the moss <i>Calliegroon cuspidatum</i>. Scrub encroachment from sycamore, ash, common hawthorn, goat willow, elder and bramble is evident across the mound that forms dense scrub patches particularly on the lower slopes of the western side of the mound.</p>





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Target Note	Description
<p data-bbox="456 275 505 296">TN8</p> 	<p data-bbox="695 275 1443 415">An 8m high hedgerow running along part of the boundary of the quarry and application site 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>
<p data-bbox="456 590 505 611">TN9</p> 	<p data-bbox="695 590 1443 751">A 5m hedgerow running along part of the boundary of the quarry and application site dominated by semi-mature ash with some sycamore (semi-mature), common hawthorn, blackthorn (<i>Prunus spinosa</i>), elder and bramble also present that extends out to form a dense scrub belt that gradually widens towards its northern extent.</p>
<p data-bbox="451 905 509 926">TN10</p>  	<p data-bbox="695 905 1443 961">Large bund / soil mound 10-15m high supporting rank neutral grassland with some scrub development.</p> <p data-bbox="695 961 1443 1052">The grassland sward is dominated by false oat-grass with frequent common couch (<i>Elytrigia repens</i>) and some rough meadow grass.</p> <p data-bbox="695 1052 1443 1283">The herb component that never forms a conspicuous component of the sward, with the exception of locally frequent creeping thistle, includes rosebay willowherb, spear thistle (<i>Cirsium vulgare</i>), wild carrot (<i>Daucus carota</i>), great willowherb (<i>Epilobium hirsutum</i>), meadow vetchling, ribwort plantain, creeping cinquefoil, broad-leaved dock, common ragwort, bladder campion (<i>Silene vulgaris</i>), dandelion, red clover, white clover, colt's-foot, common nettle as well as field horsetail.</p> <p data-bbox="695 1283 1443 1373">Some encroachment of scrub is evident including isolated shrubs of sycamore, ash and goat willow as well as small patches of bramble.</p>
<p data-bbox="451 1526 509 1547">TN11</p> 	<p data-bbox="695 1526 1443 1724">A shallow depression formed at the base of a large mound in the northern part of the application site that supports an inundation type community that is in the early stages of developing into a small patch of reed swamp. Wetland species of flora present include a small stand of reedmace (<i>Typha latifolia</i>) along with creeping bent (<i>Agrostis stolonifera</i>), compact rush, hard rush and creeping buttercup (<i>Ranunculus repens</i>).</p>




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Target Note	Description
<p>TN12</p> 	<p>A spoil mound/bund located in the northern part of the application site that rises up 20m before levelling out and dropping a few metres to an area of restored quarry. The mound supports scattered scrub consisting of occasional butterfly-bush (<i>Buddleja davidii</i>) and some common hawthorn. The understory consists of recolonising bare ground habitat dominated by colt's-foot with frequent Yorkshire-fog. Other species present include rosebay willowherb, creeping thistle, meadow vetchling, selfheal, common ragwort and white clover.</p>
<p>TN13</p> 	<p>An area of restored quarry that supports recolonising bare ground habitat. The typically sparse vegetation includes a good diversity of species including the graminoid species of creeping bent, Yorkshire-fog, red fescue, Italian rye-grass, hard rush and the herbaceous species of yarrow (<i>Achillea millefolium</i>), rosebay willowherb, creeping thistle, spear thistle, broad-leaved willowherb (<i>Epilobium montanum</i>), cleavers (<i>Galium aparine</i>), pineappleweed (<i>Matricaria discoidea</i>), black medick, ribbed melick (<i>Melilotus officinalis</i>), common poppy (<i>Papaver rhoeas</i>), greater plantain (<i>Plantago major</i>), knotgrass (<i>Polygonum aviculare</i>), redshank (<i>Polygonum persicaria</i>), silverweed (<i>Potentilla anserina</i>), creeping buttercup, wild radish (<i>Raphanus raphanistrum</i>), broad-leaved dock, hedge mustard (<i>Sisymbrium officinale</i>), prickly sow thistle (<i>Sonchus asper</i>), common chickweed (<i>Stellaria media</i>), dandelion, red clover, white clover, scentless mayweed (<i>Tripleurospermum inodorum</i>) and colt's-foot.</p>
<p>TN14 No Photograph Available</p>	<p>A stand of Japanese knotweed (<i>Fallopia japonica</i>) that is a non-native invasive species.</p>
<p>TN15</p> 	<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>
<p>TN16 No Photograph Available</p>	<p>A large soil mound similar to TN10 but with the habitats much less developed. Dense scrub consisting of sycamore, common hawthorn, ash, blackthorn and elder becomes more prominent on the lower slopes of the mound particularly on its southwesterly edge.</p>
<p>TN17 No Photograph Available</p>	<p>A tall remnant hedgerow dominated by semi-mature ash.</p>

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Target Note	Description
<p data-bbox="451 275 513 296">TN18</p> 	<p data-bbox="695 275 1435 499">Small marshy area adjacent to a drainage ditch typically dominated by tall herbs. Species present include the graminoid species of tufted hair-grass (<i>Deschampsia cespitosa</i>), Yorkshire-fog, rough meadow-grass, soft rush and scattered small stands of reedmace. The herb species include spear thistle, great willowherb, hemp-agrimony (<i>Eupatorium cannabinum</i>), hogweed, meadow buttercup (<i>Ranunculus acris</i>), broad-leaved dock, common ragwort, red clover and common nettle.</p>
<p data-bbox="451 583 513 604">TN19</p> 	<p data-bbox="695 583 1435 722">A drainage ditch flowing in an easterly direction out of the application site with a mean channel width of 1.5m at normal water level and banks up to 2m in height at an angle of 45°. At the time of the survey most of the lengths of the watercourse were dry exposing a substrate consisting of mud and silt.</p> <p data-bbox="695 730 1435 932">Vegetation was typically sparse but where present included emergent water plantain (<i>Alisma plantago-aquaatica</i>), jointed rush (<i>Juncus articulatus</i>), water forget-me-not (<i>Myostis scorpioides</i>), branched bur-reed (<i>Sparganium erectum</i>), reedmace) and submerged fennel pondweed (<i>Potamogeton pectinatus</i>). Also along the marginal zone were creeping bent, soft rush (<i>Juncus effusus</i>) and hard rush.</p> <p data-bbox="695 940 1435 1024">The banks are largely dominated by scrub and tall ruderal vegetation except along the lower section of the right bank that supports a number of wetland species as described in TN18.</p>
<p data-bbox="451 1033 513 1054">TN20</p> 	<p data-bbox="695 1033 1435 1402">A small area of grassland with some affinities to a calcareous grassland habitat-type extending along the top of the quarry lip. The grassland has a short sward, maintained by rabbit grazing, that includes the grasses of red fescue and Yorkshire-fog but which never have overall prominence. The herb species include daisy (<i>Bellis perennis</i>), common centaury (<i>Centaurium erythraea</i>), common cat's-ear (<i>Hypochaeris radicata</i>) field scabious (<i>Knautia arvensis</i>), common bird's-foot-trefoil (<i>Lotus corniculatus</i>), mouse-ear hawkweed (<i>Pilosella officinarum</i>), ribwort plantain, colt's-foot and some bramble. The grassland also supports a good population of common spotted orchid (<i>Dactylorhiza fuchsia</i>) (white flowered plants only) and pyramidal orchid with 39 and 55 individual spikes counted respectively.</p>
<p data-bbox="451 1417 513 1438">TN21</p> 	<p data-bbox="695 1417 1435 1528">A small area of swamp vegetation formed in a shallow depression on top of a large soil mound dominated by reedmace and rushes that include frequent jointed rush as well as soft rush and common spike-rush (<i>Eleocharis palustris</i>).</p>

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Target Note	Description
TN22 	<p>A relatively extensive area of very high soil mounds supporting a mosaic of rank neutral grassland, scrub and recolonising bare ground vegetation with similar species composition as for TN10 but more established.</p> <p>Dissecting the soil mounds is a drainage ditch (TN19) and associated maintenance berms dominated by tall ruderal vegetation dominated by creeping thistle but with lesser burdock (<i>Arctium minus</i>), spear thistle, rosebay willowherb, great willowherb, wild mignonette (<i>Reseda lutea</i>) and common ragwort forming a conspicuous strip of vegetation</p>
TN23 	<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>
TN24 	<p>A large quarry void with some standing water on the quarry floor. The quarry floor and walls are typically devoid of vegetation although some male fern (<i>Dryopteris filix-mas</i>) and hart's-tongue (<i>Phyllitis scolopendrium</i>) have colonised certain areas of the upper quarry faces.</p>

Flora

Protected and Notable Species of Flora

- 4.20 During the extended Phase 1 Habitat Survey of the application site, no protected or rare species of flora were recorded on, or immediately adjacent to it.

Non-native Invasive Species

- 4.21 A relatively small stand of the highly invasive Japanese knotweed was found to be present on the eastern side of a spoil mound in the northeast corner of the application site (TN16).
- 4.22 No other non-native invasive species of flora was found to be present on, or immediately adjacent to, the application site.

Mammals

Badger (Meles meles)

- 4.23 Badgers have historically been seen by security staff at Huntstown Quarry and whilst the habitats within the development and in the immediate surrounding area provide good opportunities for badgers, no evidence of badger (i.e. setts, tracks, latrines, snuffle holes or hairs) was found on or immediately adjacent to the application site during the extended Phase 1 Habitat Survey.

Bats

- 4.24 All of the existing buildings and structures within the application site are considered to have negligible bat roosting potential due to their construction and current condition. During an external inspection of the buildings no evidence was found to suggest bats have used, or are currently using these structures for roosting purposes (i.e. droppings, urine staining, scratch marks and feeding remains).
- 4.25 All the trees within and on the boundary of the application site are considered to provide limited roosting potential for bats due to their age and condition with no obvious features offering bat roosting potential (i.e. holes and cavities, cracks and splits in major limbs, loose bark, ivy cover and dense epicormic growth) found. All the trees with the study area were assessed as Category 3 (i.e. they have negligible potential to support roosting bats) in accordance with the current published criteria⁷.
- 4.26 The habitats within the application site provide some opportunities for foraging bats in particular the commoner species, i.e. common pipistrelle (*Pipistrellus pipistrellus*) and brown long-eared bat (*Plecotus auritus*), with good connective corridors, predominantly hedgerows, linking into the wider surrounding countryside. However, given the availability of large areas of alternative good quality foraging habitats in the wider surrounding area it is highly unlikely the site is important or critical to any particular species of foraging bat.

Irish Hare (Lepus timidus hibernicus)

- 4.27 Irish hares have historically been recorded on parts of Huntstown Quarry. In July 2010 a solitary Irish hare was recorded in the application site on the large spoil mound to the west of the quarry void (TN7).

Other Mammal Species

- 4.28 Other mammal species known to occur at Huntstown Quarry include wood mouse (*Apodemus sylvaticus*), rabbit (*Oryctolagus cuniculus*), brown rat (*Rattus norvegicus*) and fox (*Vulpes vulpes*).

⁷ Bat Conservation Trust (2007). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

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4.29 The habitats present in the application site provide suitable habitat for all of the aforementioned species of mammals, with evidence of rabbit and fox recorded in March and July 2010. The habitats are also suitable for hedgehog (*Erinaceus europaeus*) and stoat (*Mustela ermine*) although no evidence was found to suggest the presence of these species during the extended Phase 1 Habitat Survey and other field visits.

Birds

4.30 A survey to record birds on the application site and over the wider quarry area was undertaken in July 2010. No formal breeding bird survey was undertaken. The survey recorded a total of 40 species of birds with 21 of these recorded within the application site (Table 4.4). Two species are red listed⁸ and three amber listed⁹ Birds of Conservation Concern¹⁰. Of these species, most are considered to have the potential to be breeding on the site.

Table 4-3 : Summary of Birds Recorded on the Application Site

Scientific Name	Common Name	Red List	Amber List
<i>Turdus merula</i>	Blackbird		
<i>Cyanistes caeruleus</i>	Blue Tit		
<i>Pyrrhula pyrrhula</i>	Bullfinch		
<i>Buteo buteo</i>	Buzzard		
<i>Fringilla coelebs</i>	Chaffinch		
<i>Prunella modularis</i>	Dunnock		
<i>Carduelis carduelis</i>	Goldfinch		
<i>Parus major</i>	Great Tit		
<i>Larus argentatus</i>	Herring Gull	√	
<i>Corvus monedula</i>	Jackdaw		
<i>Falco tinnuculus</i>	Kestrel		√
<i>Larus fuscus</i>	Lesser Black-backed Gull		√
<i>Carduelis cannabina</i>	Linnet		√
<i>Pica pica</i>	Magpie		
<i>Anthus pratensis</i>	Meadow Pipit		
<i>Turdus viscivorus</i>	Mistle Thrush		
<i>Motacilla alba</i>	Pied Wagtail		
<i>Erithacus rubecula</i>	Robin		
<i>Hirundo rustica</i>	Swallow		
<i>Sylvia communis</i>	Whitethroat		
<i>Troglodytes troglodytes</i>	Wren		
<i>Embriza citrinella</i>	Yellowhammer	√	

⁸ 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.

⁹ 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.

¹⁰ Lynas, P., Newton, S. F., & Robinson, J. A. (2009). *The Status of Birds in Ireland: An analysis of Conservation Concern 2008-2013*. Irish Birds, 8(2): 149-166.

Reptiles

- 4.31 There are no historical records for common lizard (*Zootoca vivipara*) at Huntstown Quarry.
- 4.32 Common lizard is a species that can be found in wide range of habitats with part of the application site considered to provide suitable habitat for this species, although no individual animals were observed during the extended Phase 1 Habitat Survey.

Amphibians

- 4.33 Both common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*) have been recorded in some of the ponds at Huntstown Quarry.
- 4.34 The only permanent pond on the site found at TN23 provides suitable breeding habitat for common frog and smooth newt, although at the time of the survey, no evidence (i.e. adults, eggs, tadpoles or efts) were observed in this waterbody.
- 4.35 All other waterbodies on the application site are ephemeral in nature and it is considered unlikely that any breeding attempt would be successful in these locations due to the risk of drying out.

Invertebrates

- 4.36 Habitats recorded on the site during the extended Phase 1 Habitat Survey provide opportunities for a wide range of invertebrate taxa. During the extended Phase 1 Habitat Survey a number of common and widespread species of Lepidoptera, Odonata and other groups of invertebrate taxa were observed.
- 4.37 Whilst no site is without invertebrate interest, it is considered unlikely that the site is important or critical to any particular individual species or groups of terrestrial invertebrates given the large extent of alternative high quality habitats within the immediate and wider surrounding area.

Other Protected, Rare and Notable Species

- 4.38 During the extended Phase 1 Habitat Survey and other site visits, no other protected, rare or notable species were recorded. Though the site may support low numbers of common and widespread species it is considered highly unlikely that any other specially protected species would be present.

Predicted Trends

- 4.39 In the absence of the proposed development of an inert waste recovery facility at this site, there is no reason to believe that the current baseline, as described above, would change significantly in the short to medium term (i.e. the timescale of the proposed development) with the possible exception of continued encroachment by scrub over the spoil mounds and bunds.

- 4.40 Over the longer term, the quarry would be restored to agricultural land as part of an existing restoration plan and under a condition of planning consent granted in respect of quarrying operations.

Evaluation of Ecological Receptors

- 4.41 IEEM suggests that to ensure a consistency of approach, ecological features are valued in accordance with the geographical frame of reference, as defined below:
- International
 - National (Ireland)
 - Regional (County Dublin)
 - District (East Fingal)
 - Local (Huntstown Quarry and surrounding area) and/or
 - within immediate zone of influence only or less than local (the application site)
- 4.42 The above categories are then applied to the features identified in baseline surveys and desk-top studies. Some feature can already be recognised as having ecological value and, as such, they may be designated as statutory or non-statutory nature conservation sites. Other features may require an evaluation based upon their previously unassessed biodiversity value and the rationale for grading such features is provided below.
- 4.43 For features that have not been formally recognised by a designation, an evaluation based upon the IEEM guidelines has been undertaken. The features being evaluated are considered in the context of the site and locality. In this way it is possible to provide a more accurate assessment of the impacts in the locality.
- 4.44 The criteria used to determine the biodiversity value of a species or features that may support a species include the following general considerations
- size of populations in the local geographic context;
 - rarity at a geographical level (international, national or local);
 - endemism and locally distinct varieties or sub-species;
 - species on the edge of their geographic range;
 - species-rich assemblages of a larger taxonomic grouping, e.g. herpetofauna or over-wintering birds;
 - plant communities, ecosystems or habitat mosaics / associations that provide habitat for any of the above species or assemblages; and
 - populations of species considered as significant under locally published guidelines or red data books.
- 4.45 All species and populations of species, including those with statutory protection, are evaluated on the same basis. The typical unit of a species for the purposes of evaluation is a viable population, i.e. a breeding adult(s) with sufficient habitat(s) to raise young. Where a site does not include sufficient habitat to support a viable population, then the assessed species value should be informed by the extent of the habitat required to support a viable population and the proportion of this habitat within the site. Additional weight would be given where a site supports habitats that are important or critical for

the maintenance of a species population at some point in its lifecycle, e.g. open water habitats for over-wintering birds or hibernation areas for bats or amphibians.

- 4.46 It should be noted that contribution to the local population is the primary criterion used for evaluating species. Even where a species is protected under European and Irish statute, the presence of a small population on a site within any specific area where this species is widespread is primarily assessed as valuable at a geographic level where it contributes >1% of the population present at that level. Equally, a particular feature on a site may attract large numbers of an unprotected species that has limited distribution and this may represent a feature of greater importance.
- 4.47 An evaluation of the ecological features, including habitats and species, identified through the findings of desk-based study and a field survey, is summarised in Table 4.4 and Table 4.5 respectively.

Table 4-4 : Evaluation of Habitats

Level of Value	Receptor	Location	Rationale
Local	GS1 – Dry calcareous and neutral grassland	TN20	A restricted habitat in Ireland. Small patch of calcareous grassland supporting a good diversity of species including a number of orchids but vulnerable to scrub encroachment and constrained by the quarry void and spoil mounds which reduces its overall ecological value.
	GS2 – Dry meadows and grassy verges	TN1, TN2, TN3, TN7, TN10, TN16, TN22	Typically common and widespread habitat that is generally rather species-poor but due to its extent and lack of management provides suitable habitat for a range of species including mammals, birds, reptiles and invertebrates in the context of the wider surrounding area.
	WL1 – Hedgerows	TN1, TN2, TN3, TN6, TN8, TN9, TN15, TN17	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 Typically common and widespread habitat and although species-poor and not the best examples of hedgerows in the local area still provide opportunities for a range of species and providing wildlife corridors.
Less than local	WS1 – Scrub	TN5, TN7, TN12, TN22 and other locations throughout the site	Typically common and widespread habitat providing opportunities for a number of bird species for breeding and foraging.

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Level of Value	Receptor	Location	Rationale
	GA1 – Improved agricultural grassland	Part of one field on the eastern side and one field on the western side of the site.	Typically common and widespread habitat of low ecological value but can provide habitat for a range of species.
	GM1 – Marsh	TN18	Typically common and widespread habitat which provides suitable habitat for invertebrates
	FL8 – Other artificial lakes and ponds	TN23	Typically common and widespread habitat which provides suitable habitat for amphibians and invertebrates.
	FW4 - Drainage ditches	TN1, TN6 TN19	Typically common and widespread habitat which on this site periodically run dry but which can support a range of species.
	FS1 – Reed and large sedge swamps	TN11, TN21	Very small and still developing areas of habitat that is typically common and widespread.
	FS2 – Tall-herb swamps	TN18	Typically common and widespread habitat which provides suitable habitat for invertebrates.
	ER2 – Exposed calcareous rock	TN24	A fairly common and widespread anthropogenic habitat providing opportunities for a number of species including birds and invertebrates.
	ED2 – Spoil and bare ground	Area on eastern side of site and other scattered locations	An anthropogenic habitat providing little opportunity for wildlife.
	ED3 – Recolonising bare ground	TN4, TN12, TN22 and other scattered locations	Typically common and widespread habitat that is generally species-poor but provides suitable habitat for a number of species, in particular invertebrates.
	BC1 – Arable crops	One field on western side of site	An anthropogenic habitat providing little opportunity for wildlife.
	BL3 – Buildings and artificial surfaces	Existing infrastructure on site	An anthropogenic habitat providing little opportunity for wildlife.

Table 4-5 : Species Evaluation

Level of Value	Receptor	Location	Rationale
Less than local	Bats	Application site and immediate surrounding area	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the European Communities (Natural Habitats) Regulations 1997 (as amended). Site offering negligible bat roosting opportunities. Site offering potential foraging habitat but unlikely to be vital for any particular species of bat and not likely to be important or critical for local bat populations given the availability of alternative habitat in the wider surrounding area.
	Irish Hare	Application site and immediate surrounding area	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 Fairly common species in Ireland. Present within the application site and likely throughout the wider surrounding area. The site is unlikely to be important or critical for this species given the availability of high quality habitat for this species in the wider surrounding area.
	Other mammal species	Application site and immediate surrounding area	Potential for the site to support a range of small mammals but is unlikely to be important for any particular species or population.
	Bird assemblage	Application site and immediate surrounding area	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 Potential breeding site for a number of common and widespread bird species but is unlikely to be important for any particular species or population.
	Reptiles	Application site and immediate surrounding area	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. Grassland and scrub habitats provide potential habitat for common lizard however, the lack of any evidence during the habitat survey, the site is classed as being of less than local value for this species.

Level of Value	Receptor	Location	Rationale
Less than local	Amphibians	Application site and immediate surrounding area	Protected under the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000. Potential breeding and terrestrial habitat for both common frog and smooth newt however, the lack of any evidence during the habitat survey, the site is classed as being of less than local value for these species.
	Invertebrates	Application site and immediate surrounding area	The site provides potential habitat for a range of invertebrates but is unlikely to be important or critical to any particular species or taxonomic group.

IMPACTS OF PROPOSED WASTE FACILITY

Assessment Methodology

4.48 The methodologies used to determine the value of ecological resources, to characterise impacts of the proposed inert waste facility and to assess the significance of impacts and any residual effects are described below. This approach is in accordance with the EPA guidance and the IEEM guidelines.

Assessment of Impacts

4.49 Impacts are characterised in terms of the criteria summarised in Table 4.6, based on IEEM methods of assessment. These factors are brought together to assess the significance of an impact on a particular habitat or species.

Table 4-6 : Key Considerations when Characterising Impacts

Description	Definition
Direction of impact	Adverse or beneficial impact
Probability of occurring	Broadly defined on 3 levels: Certain, Probable or Unlikely
Complexity	Direct, Indirect or Cumulative
Extent and Context	Area/number affected and % of total
Magnitude	Describes the severity of effect as major, moderate, minor or negligible.
Duration	Permanent or Temporary in ecological terms (e.g. within the lifetime of the species affected)
Reversibility	Whether or not the effect can be reversed
Area	Expressed as area or percentage of the study area

Assessing Significance

- 4.50 An assessment is then made of the likely significance of the impact prior to mitigation.
- 4.51 Impacts are defined as being negative, neutral 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 conservation status of habitats or species within a geographical area.

Mitigation and Avoidance

- 4.52 Where a potential negative impact has been identified, mitigation measures have been formulated using best practice techniques and guidance to prevent, reduce or offset a significant effect.

Residual Effects

- 4.53 The final part of the assessment is to assign a level of significance of the residual impact of this scheme in terms of their significance from an ecological perspective and also the implications of those effects from a legal and policy perspective following mitigation. This is based on the sensitivity of the ecological resource that will be affected, and the magnitude of the predicted impact. 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.
- 4.54 Residual impacts are characterised in terms of their direction, permanence, certainty and reversibility. These factors are brought together to assess the magnitude of the impact on a particular valued ecological receptor using the following criteria:
- Major – a permanent or long-term effect on the extent, size or integrity of a site, habitat, species assemblage / community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
 - Moderate - a permanent or long-term effect on the extent, size or integrity of a site, habitat, species assemblage / community, population or group. If adverse, this is unlikely to threaten its sustainability; if beneficial; this is likely to be sustainable but is unlikely to enhance its conservation status.
 - Minor – a short-term but reversible effect on the extent, size or integrity of a site, habitat, species assemblage / community, population or group that is within the range of variation normally experienced between years.
 - Negligible - a short-term but reversible effect on the extent, size or integrity of a site, habitat, species assemblage / community, population or group that is within the range of variation normally within the normal range of annual variation.

- 4.55 This section provides a summary of the potential ecological impacts of the proposed development of an inert soil recovery facility at Huntstown Quarry, based on the baseline information 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.

Identification of Potential Impacts

- 4.56 A detailed description of the proposed development is presented in Chapter 2 of the Environmental Impact Statement, but, in summary, the proposed development involves the importation of inert material including soils, stones and a limited volume of construction and demolition waste to infill the existing quarry void as part of the overall proposed quarry restoration scheme.
- 4.57 The potential ecological impacts arising from the proposed development fall into one main category:
- Impacts arising from activities associated with the construction and operation of an inert soil recovery facility.
- 4.58 The material imported to the inert soil recovery facility will be used to infill the existing quarry void and will form part of the overall quarry restoration scheme, the restoration plan for this site has already been agreed by Fingal County Council in 2002, in accordance with a planning condition of the 1994 planning consent for this quarry. At this current time there are no proposals that would significantly alter the agreed restoration plan, therefore it is considered not necessary to assess the potential impacts arising from the restoration activities on this site post the infilling of this quarry void.

Assessment of Effects

- 4.59 The following section details the assessment of predicted effects on habitats and species from the construction and operation of the inert soil recovery facility and the ultimate restoration of the former quarry.
- 4.60 Potentially significant impacts that may arise during the construction and operational phases of the inert soil recovery facility include:
- habitat loss and fragmentation through land-take;
 - effects of habitat loss and fragmentation upon species of fauna;
 - disturbance from human activity noise and vibration,
 - dust deposition;
 - alteration to surface water flows and quality;
- 4.61 The effects that these potential impacts may have on habitats and species are discussed below.

Habitat Loss and Fragmentation through Land-take

- 4.62 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.
- 4.63 Habitat fragmentation is concerned with spatial processes, such as negative edge effects (e.g. colonisation by 'aggressive' species or successional changes) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.
- 4.64 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.
- 4.65 The infrastructure associated with the development of the inert soil recovery facility will utilise existing facilities i.e. roads, buildings, wheel bath and weighbridge, and will not necessitate any loss of habitat through land-take.
- 4.66 No habitats outside the existing quarry void and the area to the north of the void already undergone some infilling and restoration operations would be lost as a result of the development proposals.
- 4.67 Habitats that would be lost or modified as a result of the proposed development include the quarry void and its associated features including rock faces and recolonising bare ground habitat typically supporting sparse communities of ephemeral and short perennial flora all of which are assessed as being of less than local value and not significant.

Effects of Habitat Loss and Fragmentation upon Species of Fauna

- 4.68 Habitat loss and fragmentation can have a direct impact on individual populations and assemblages of species and lead to the loss of individuals or populations of animal species. It can also have an indirect impact by increasing levels of stress placed upon populations of some species through negative edge effects (e.g. predation pressure) and dispersal problems that can become increasingly severe as habitat is lost and remaining habitat is divided into smaller units.
- 4.69 At this current time, the quarry void provides limited opportunities for wildlife, with the possible exception of its use by a number of species that will utilise rock faces and ledges as potential nesting sites. However, it is considered highly unlikely that this site would be critical or vital to any particular species of bird and the loss of the quarry void and associated features is not predicted to have any significant adverse direct or indirect effects on any individual species or population of fauna.

- 4.70 The loss of the habitats on the site is unlikely to cause significant habitat fragmentation to and from the surrounding countryside.

Disturbance from Human Activity, Noise and Vibration

- 4.71 Increases in disturbance, as a result of human activity can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.
- 4.72 Certain species of birds are likely to be more vulnerable to noise and visual disturbance than others. Analysis of the responses of certain bird species to disturbance has found that passive, low-level and continuous disturbance is likely to lead to habituation by birds to such disturbance whereas active, high level and discontinuous disturbance is likely to lead to the displacement of some bird species from the disturbed area except for only the very tolerant species¹¹. Whilst it is recognised that assessing the impacts of disturbance to birds is difficult and that, unlike human beings, there are no environmental standards that can be applied for birds, it is generally accepted that noises of 70dB or greater can have an impact on certain bird species at a distance of up to 300m from its source.
- 4.73 The noise assessment, presented at Chapter 8 of the EIS, has shown that the change in ambient noise levels will comply with the daytime noise emission limit of 55dB(A) in accordance with current guidelines for sensitive receptors.
- 4.74 Based on the results of the noise assessment and given that the species already present within the Huntstown Quarry site and surrounding areas will already be accustomed to the noise and human activity at this site as result of disturbance from quarrying operations including blasting and from other industrial processes on this site, no significant impact is predicted as a result of the proposed development.

Dust Deposition

- 4.75 The development proposals have the potential to generate dust through the transportation and processing of soil and other inert waste materials.
- 4.76 The deposition of dust can have adverse effects upon vegetation restricting photosynthesis, respiration and transpiration. Furthermore it can lead to phytotoxic gaseous pollutants penetrating the plants. The overall effect can be a decline in plant productivity, which may then have indirect effects on the quality of the affected habitats and associated fauna.
- 4.77 The levels at which dust deposition is considered likely to affect the most sensitive species or ecosystems is considered to be 1000 mg/m²/day¹². The air quality assessment, presented in Chapter 7 of the EIS, would indicate that

¹¹ Hockin, D., Ounsted, M., Gorman, M., Hill, D., Keller, V. And Barker, M.A. (1992). *Examination of the Effects of Disturbance on Birds with Reference to its Importance in Ecological Assessments*. Journal of Environmental Management Vol 36 pp 253-286.

¹² Highways Agency (2007). Design Manual for Roads and Bridges Volume 11, Section 3, Part 1 HA207/7 Air Quality. Highways Agency.

provided industry standard dust mitigation measures are employed at the site during construction it is highly unlikely that these dust deposition levels will exceed 350 mg/m²/day, far below the level where it would be expected to have an effect on sensitive ecological receptors. Therefore no significant impact is predicted on any habitats or species of flora within the immediate surrounding area.

Alterations to Surface Water Flows and Quality

- 4.78 The existing surface water management system within the quarry void is designed such that surface water drains to a sump within the quarry floor, at which point an electric pump lifts water out of the quarry void and the water discharged into a watercourse flowing towards the Ward River. This is described in more detail in Chapter 6 of the EIS.
- 4.79 The water management system currently in operation would remain in place until such time as the infilling of the quarry void makes this system redundant.
- 4.80 It is likely that changes in water flows from the quarry void as a result of the proposed inert soil recovery facility will be relatively minor, and no significant impacts are predicted.
- 4.81 During the operation of the waste recovery facility, there is a risk of contaminated run-off being generated from accidental spillages of oils and fuels from the plant and vehicles moving around the site, and from elevated suspended solids being discharged to existing watercourses. However, the facility would incorporate various best practice techniques and methods to manage surface water before waters are attenuated and discharged to existing watercourses that would minimise the risk of contamination to them. Consequently no significant impacts are predicted.

Cumulative Impacts

- 4.82 There are no other known 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 local area at this current time. It is therefore considered that no significant cumulative impacts would occur.

MITIGATION MEASURES

- 4.83 The section outlines the mitigation measures considered appropriate in order to prevent, reduce or offset any potential adverse effects on the ecological resource present on the application site and within its zone of influence.

General Measures

- 4.84 The construction and operation of the inert soil recovery facility at Huntstown Quarry would be carried out in accordance with all statutory requirements and with various best practice techniques and appropriate guidelines in a sensitive manner.

- 4.85 Suitable site management and procedures would be implemented to avoid and/or minimise the generation of excessive human disturbance, dust and noise.
- 4.86 Measures would be incorporated into the site design to manage and control the amount of surface water run-off and contamination of surface waters before being discharged to the perimeter drains.

Specific Ecological Mitigation

- 4.87 The only statutory protected species with relevance to the development of the inert soil recovery facility at Huntstown Quarry is considered to be the potential for the rock faces to be used by some species of birds for nesting purposes. Although no significant impact on birds is predicted, nearly all wild bird species are afforded protection under the Wildlife Act 1976 (as amended) 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.
- 4.88 In order to comply with wildlife legislation, it is recommended that the operation to infill the quarry void should begin outside the bird breeding season wherever practically possible in order to deter birds from nesting within this site. Where this is not practical, works will only proceed after the rock faces have been checked and deemed free of active nests by a suitably qualified ecologist. If active nests are found then no works will begin in the vicinity of the nest site and an adequate buffer zone around the nest site until the young birds have fledged and left the nest.
- 4.89 Whilst it is considered unlikely that other protected species are present within the quarry void, it does not necessarily preclude their being present at a later date. Therefore prior to any activities on the site a pre-works inspection will be undertaken for and where necessary appropriate mitigation put in place to ensure compliance with current wildlife legislation.
- 4.90 Through the consideration of the mitigation general measures incorporated into the proposed scheme, it is considered that all reasonable and practical steps have been taken to avoid significant adverse effects upon habitats and species and no further recommendations are deemed necessary.

Monitoring

- 4.91 Due to the minimum impacts relating to the proposed development on habitat and species, it is considered that there is not a need to implement any monitoring of impacts on flora and fauna.

SUMMARY AND CONCLUSIONS

- 4.92 The site of the proposed inert soil recovery facility and its immediate surrounding area have no nature conservation designations and there are no such sites within a 2km radius of the proposed application site,

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- 4.93 The site of the proposed inert soil recovery facility located in the northern quarry at Huntstown Quarry will result in the infilling of an existing quarry void that is considered at this present time to be of less than locally important ecological value and not significant. The quarry void is unlikely to support any important habitats and/or protected or notable species of flora and fauna.
- 4.94 The ecological impact assessment has shown that no significant impacts on habitats and/or species from the proposed development are predicted, provided general environmental mitigation measures are implemented.

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FIGURES

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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 0000711 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

	WASTE LICENCE APPLICATION AREA (c. 35.9 ha)
	Target Note
	Scrub
	Hedgerows
	Improved agricultural grassland
	Dry calcareous & neutral grassland
	Dry meadows & grassy verges
	Marsh
	Other artificial lakes & ponds
	Drainage Ditch
	Reed & large sedge swamps
	Tall-herb swamps
	Exposed calcareous rock
	Spoil & bare ground
	Recolonising bare ground
	Arable crops
	Buildings & artificial surfaces
	Stand of Japanese Knotweed



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**ROADSTONE WOOD LTD.
 ENVIRONMENTAL IMPACT STATEMENT
 WASTE RECOVERY FACILITY,
 HUNTSTOWN QUARRY,
 NORTH ROAD, FINGLAS, DUBLIN 11
 HABITAT MAP**

FIGURE 4-1
 Scale 1:3,250 @ A3 Date FEBRUARY 2011