SECTION 4: FLORA AND FAUNA

4.1 INTRODUCTION

This chapter of the Environmental Impact Statement (EIS) assesses the ecological impact of the proposed inert soil recovery facility at Milverton, Skerries, Co. Dublin.

4.1.1 Baseline Study Methodology

The objective of this ecological study is to identify and assess the significance of the flora and fauna occurring on or in the immediate vicinity of the application site in order to determine the potential ecological impact of the proposed waste recovery facility at the site.

This assessment 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 ecological effects which may occur as a result of the operation of an inert waste recovery facility at Milverton; 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 including designated sites, habitats and species.

A field survey of the flora and fauna at the site was originally undertaken on 15th May 2008 and repeated on 28th May 2014. The application area was inspected systematically by walking along existing boundaries and access tracks, as well as criss-crossing the site, where possible to do so. During this time, a record was made of all flora and fauna and habitat types.

All vascular plants observed during the surveys were identified to species level. Identification and naming of vascular plants used Stace (2001). Bird species were noted whenever encountered or clearly identifiably through calls or song. Signs of mammal activity including tracks and footprints, scats and burrows or other resting places were searched for, as well as looking out for the mammals themselves. Invertebrates (e.g. bees and butterflies) were recorded from flowers or under stones etc. and any unusual species were noted. Information on sites of conservation importance for North County Dublin / Fingal (National Parks and Wildlife Service) was obtained during the report writing stage.

4.1.2 Relevant Legislation

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EU Habitats Directive) and Council Directive 2009/147/EC on the Conservation of Wild Birds (the EU Birds Directive) oblige member states to protect habitats and species that are of importance on a Europe-wide scale. Annex I and II of the Habitats Directive and Annex I of the Birds Directive list species and habitats that are of greatest conservation importance on an EU-wide scale and for which conservation areas must be designated. These designations are:

- Special Areas of Conservation (SAC) for habitats listed in Annex I of the Habitats Directive and species listed in Annex II. Some of these habitats or species are prioritised for conservation measures (* Priority Species or Habitats) and
- Special Protection Areas (SPA) for Birds listed in Annex I of the Birds Directive

A number of other Annexes in both Directives list species that require strict protection but not necessarily require designation of conservation areas. Ireland is also a signatory

to a number of conservation-related agreements and conventions such as the Bern and Bonn Conventions.

The EU Directives have been transposed into Irish law through a number of legal instruments including the European Communities (Birds and Natural Habitats) Regulations 2011 (the 'Habitat Regulations'), the Wildlife Acts, 1976-2000, the Planning and Development Act, 2000, and the Foreshore Acts, 1932-1992.

Other legal instruments such as the Wildlife Acts (1976 and 2000) and the Flora Protection Order (1999) also provide protection for species of national conservation importance. Proposed Natural Heritage Areas (pNHA) are conservation designated areas that protect species and habitats of regional and national importance. At a more local level, there may be objectives set out in County Biodiversity Action Plans in respect of uncommon or rare species and habitats within the County.

4.2 RECEIVING ENVIRONMENT

4.2.1 Overview of Baseline Study

Roadstone Limited operated the application site as a limestone quarry and produced construction materials at this location up to mid 2008. Practically all of the application area has been historically disturbed by quarrying and rock extraction activities and the only natural habitat that remains are sections of perimeter hedgerow along the site boundary.

Since the cessation of quarrying operations at Milverton, some natural re-colonisation of the quarry site has occurred.

4.2.2 Designated Sites

The application site is not subject to any statutory or non-statutory nature conservation designations.

There are two statutory and one non-statutory designated nature conservation sites within a 2km radius of the application site that include:

- Statutory designated sites:
  - Skerries Islands SPA [site code 004122] 1.9km east northeast of application site; and
  - Skerries Islands NHA [001218] 1.9km east northeast.
- Non-statutory designated sites:
  - Loughshinny Coast pNHA (geological site) [002000] 2.0km east southeast.

The location of these designated sites is shown in Figure 4.1.

4.2.3 Habitats

The application site is a limestone quarry that supports several different habitats, principally

- A section of perimeter hedgerow which defines much of the site boundary;

- Areas of scrub;
- Exposed calcareous rock (including cliff faces); bare and recolonising bare ground;
- Dry grassland;
- An area of open standing water formed through the flooding of the main quarry void; and
- A number of buildings and areas of artificial surfaces

The location and extent of these habitats within the application site is illustrated in Figure 4.1.

(a) Hedgerows

Hedgerows form an almost continuous boundary around the perimeter of the application site. The majority of the hedgerow is mature and unmanaged. The predominant canopy species are a mix of both native and introduced species such as Willow (*Salix spp.*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*) and Elder (*Sambucus nigra*), with non-native species including Sycamore (*Acer pseudoplatanus*), amongst others. Other woody species present include a high proportion of spinose species such as Hawthorn (*Crataegus monogyna),* Holly (*Ilex aquifolium),* Bramble (*Rubus fruticosus* agg.) and Blackthorn (*Prunus spinosa*) in addition to ground flora species such as Cleavers (*Galium aparine*), Scarlet Pimpernell (*Anagallis arvensis*), White Clover (*Trifolium repens*) and Herb Robert (*Geranium robertianum*).

(b) Scrub

Areas of scrub have developed throughout the site including areas adjacent to the internal roads leading to the quarry floor and on some benches. These areas are dominated by Butterfly Bush (*Buddleja davidii)* but also include some Sycamore (*Acer pseudoplatanus*) and Willow (*Salix* sp. agg.*).* Scrub encroachment into the site on the quarry faces from the boundary hedgerows is typically dominated by patches of Bramble and Hawthorn. At the site of the former display area a number of ornamental shrubs are present.

(c) Exposed Calcareous Rock

The extraction of limestone has resulted in the artificial exposure of calcareous rock, forming steep cliff faces. Many of the older, residual quarry faces have patchy vegetation cover, as they have been left undisturbed for several years. A range of species have colonised these areas, including Willow (*Salix sp.agg*), Gorse (*Ulex europaeus*), Bramble (*Rubus fruticosus*) and Bracken (*Pteridium aquilinum*) to more ruderal weed species such as Coltsfoot (*Tussilago farfara*), Ragwort (*Senecio jacobaea*) and Nettle (*Urtica dioica*).

(d) Bare and Recolonising Bare Ground

This describes areas where bare or disturbed ground and areas stripped of soils and overburden that have or are beginning to be recolonised by herbaceous plants. The flora present is predominately ruderals and weed species. Common examples include Common Bird's-foot-trefoil (*Lotus corniculatus*), Ribwort Plantain (*Plantago lanceolata*), Groundsel (*Senecio vulgaris*), Dandelion (*Taraxacum sp. agg*) and Hogweed (*Heracleum sphondylium*).

(e) Dry Grassland

A dry grassland community has developed through succession from recolonising bare

ground with a sward typically consisting of False Oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*) and Red Fescue (*Festuca rubra* agg.). The herbaceous component supports a good diversity of species that includes a number of species associated with more calcareous grasslands for example Kidney Vetch (*Anthyliis vulneraria*).

(f) Open Standing Water

The main quarry void has become flooded creating an area of open standing water. The lake appears devoid of aquatic and marginal vegetation except for some small patches of Floating Sweet-grass (*Glyceria fluitans*) growing on suitable substrates at the waters edge.

4.2.4 Species

Flora

During the site surveys no protected, rare or notable species of fora were recorded on, or immediately adjacent the application site.

Mammals

With the exception of Rabbit (*Oryctolagus cuniculus*) and Fox (*Vulpes vulpes*), no other evidence of other mammal species was found in the application site.

Birds

The application site provides suitable breeding and foraging habitat for a range of birds species typically associated with quarry sites, open standing water and scrub mosaics. Of the species recorded on the site Peregrine Falcon (*Falco peregrinus*) historically recorded as nesting on the site is listed under Annex I of the EU Birds Directive, whilst Swallow (*Hirundo rustica*) and Starling (*Sturnus vulgaris*) are amber listed Birds of Conservation Concern in Ireland.

Reptiles

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 due to the historical high levels of disturbance and is not likely to be present at this site.

Amphibians

During the surveys, no evidence was found to indicate Common Frog (*Rana temporaria*) and/or Smooth Newt (*Lissotriton vulgaris*) are breeding within the flooded quarry void within the application site.

Invertebrates

Whilst no site is without invertebrate interest, it is considered highly unlikely that the current extraction areas or other habitats within the application site would support any other especially protected or rare invertebrate species.

4.2.5 Evaluation

The ecological features, identified through field surveys were given a value based on a geographic context as defined in guidelines published by the National Roads Authority (NRA) as detailed below:

- International;
- National;

- County;
- Local (higher); and
- Local (lower).

An evaluation of the ecological features, including designated sites, habitats and species, identified through the findings of desk-based study and field survey are summarised in the Table 4.1 below.

Table 4.1: Ecological Evaluation

Level of Value	Site/Feature at this Value	Reason for Importance/Designation

International	Skerries Islands SPA	The Skerries Islands SPA qualifies under Article 4 of the EC Directive on the Conservation of Wild Birds (2009/147/EC) (Birds Directive) as a SPA because it regularly supports over wintering populations of European importance including:
		• breeding:
		  ○ Herring Gull (*Larus argentatus*);
		  ○ Shag (*Phalacrocorax aristotelis*); and
		  ○ Cormorant (*Phalacrocorax carbo*).
		• over winter:
		  ○ Turnstone (*Arenaria interpres*);
		  ○ Light-bellied Brent Goose (*Branta bernicla hrota*);
		  ○ Purple Sandpiper (*Calidris maritima*);
		  ○ Herring Gull (*Larus argentatus*); and
		  ○ Cormorant (*Phalacrocorax carbo*).

National	Skerries Islands NHA	Three small low-lying and uninhabited islands off the north Dublin coastline, namely Shenick's Island, St. Patrick's Island and Colt Island, and the seas surrounding the islands to a distance of 200m. The islands are of importance for both breeding seabirds and wintering waterfowl.
	Loughshinny Coast pNHA	A site noted for its geological interest but supporting coastal grass, which merges into a shingle/rocky shore with some patches of saltmarsh.
Local (higher)	Application Site (including habitats and species)	A quarry site supporting a mosaic of habitat-types that individually have

Level of Value	Site/Feature at this Value	Reason for Importance/Designation
		low ecological value but which in the context of the surrounding agricultural land and given the size of the site have a greater combined ecological and nature conservation value. Site provides suitable habitat for a range of common and widespread individual and groups of species typically associated with quarry sites, open standing water and scrub mosaics. For most species and groups of species, it is unlikely the application site is important or critical for any particular species or population given the availability of alternative suitable habitat in the wider surrounding area. Site has been historically used by breeding Peregrine Falcon.

4.3 POTENTIAL IMPACTs OF THE SCHEME

4.3.1 Development Proposals

The application site covers approximately 7.9 hectares (ha). At the present time, the application site includes sections of hedgerow, areas of scrub, bare rock, hardstanding surfaces and sealed concrete surfaces. The area beyond the application site includes arable fields to the south, east, north and west.

The application area includes site offices and other structures (including a stone building described as an 'engine room', a protected structure), aggregate processing and concrete production facilities, a plant storage and service area, car parks and a weighbridge. The site is accessed directly via the R127 Regional Road. Existing quarry infrastructure (with some upgrading where necessary) will service the proposed waste recovery facility.

Roadstone Ltd is the freehold owner of the application area. The company is applying for a waste recovery licence to the Environmental Protection Agency to provide for backfilling of the quarry void with imported inert soil and stone.

The bulk of the materials used to backfill the existing void will comprise inert soils and stones excavated at construction sites elsewhere in the Greater Dublin Area and imported to site. A proportion of the backfill materials (approximately 23%) will come

from existing soil (overburden) stockpiles and screening berms around the existing quarry. It is envisaged that as the level of backfilling approaches that of the in-situ or surrounding land, layers of subsoil will be deposited followed by a final layer of topsoil. The topsoil will be seeded with a suitable grass seed mix to produce pasture to stabilise the soil surface and prevent excessive soil runoff after precipitation.

It is likely that minor quantities of other inert concrete or brick or recovered secondary aggregate (crushed and screened concrete, bricks, tiles, and ceramics) will be used to construct temporary haul roads across the application site, as and when required. These materials will either be imported directly to site or sourced from the Applicant's construction and demolition waste recovery facility at Huntstown Quarry.

It is understood that when inert materials are imported to site, they will be checked prior to being unloaded and placed at the active backfill area. If minor quantities of non-inert waste (wood, metals, plastics, etc.) are intermixed with the imported soil, it will be removed by hand or machine and stored temporally in skips at the site. When full, these skips will be dispatched to appropriately licenced or permitted waste disposal or recovery facilities.

4.3.2 Assessment of Effects

Designated Sites

The proposed inert waste recovery facility and backfilling of the quarry at Milverton will not result in any direct land take, reduction in habitat area, or fragmentation of any habitats within any statutory or non-statutory designated site.

All of the designated sites are of a sufficient distance from the application site that that these will not be directly or indirectly affected by any disturbance from human activity (i.e. noise, visual disturbance) or from the effects of any dust deposition.

Prior to the commencement of any backfilling operations, the flooded quarry void will require dewatering with all treated wastewater discharged from site to the Mill Stream that flows to and discharges into the Irish Sea at Skerries. Water sampling indicates that the quality of water in the flooded quarry void is good and is not predicted to result in any significant deterioration of water quality in the Mill Stream and will not have any impact on the quality of the coastal waters at Skerries and any discharge is not likely to have any significant effects on Skerries Islands SPA / NHA.

During the operation of the inert waste recovery facility, surface water run-management (incidental rainfall and surface water run-off) will also require the discharge of wastewater to the Mill Stream. Through the installation of the water management system that will include settlement lagoons for the removal of sediments and a hydrocarbon interceptor, no significant deterioration of water quality in the Mill Stream is predicted and any discharge is not likely to have any significant effects on Skerries Islands SPA / NHA.

Habitats

The proposed inert waste recovery facility and backfilling of the quarry at Milverton will result in the direct loss of all existing habitats present in the application site including areas of: scrub, exposed calcareous rock, bare and recolonising bare ground, dry grassland and open standing water. The only habitat that will be retained are the hedgerows running along the boundaries of the site and a section of exposed quarry face for the purpose of retaining a feature providing a suitable nesting site for Peregrine Falcon.

The loss of each individual habitat-type is not likely to be of significance but in terms of the whole site, the loss would be significant at a local (higher) value.

The inert waste recovery facility will not result in any direct or indirect loss of any habitats outside the application site.

The processing of waste and the backfilling of the quarry void has the potential to generate fugitive dust. Fugitive dust from quarry sites are typically deposited within 100-200m of the source; the greatest proportion of which, comprising larger particles (greater than 30 microns) is deposited within 100m. Where large amounts of dust are deposited on vegetation over a long time-scale (a full growing season for example) there may be some adverse effects upon plants restricting photosynthesis, respiration and transpiration. Furthermore it can lead to phytotoxic gaseous pollutants penetrating the plants. The overall effect would be a decline in plant productivity, which may then have indirect effects on the quality of the surrounding habitats, in particular the heathland, 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.

It is anticipated that dust levels generated at this site will be below the threshold of 350mg/m^2/day, as recommended by DoEHLG, and far below levels where there would be any measureable negative effects upon habitats and/or individual species of flora immediately adjacent the application site. No specific dust sensitive habitat-types have been identified within 300m of the application site.

The discharge of treated wastewater to the Mill Stream during any dewatering operations and from the surface water management of the facility is not anticipated to result in any significant adverse impacts on the hydrological regime of this watercourse or on its water quality.

On cessation of the backfilling of the quarry void the site will be restored back to agricultural land through an agreed restoration plan.

Species

No valued species have been currently identified as present in the application site or within the immediate surrounding area.

The loss of habitats within the application site is not predicted to result in any significant impact on the local conservation and population status of any individual species.

4.4 MITIGATION MEASURES

The floral diversity at the application site is considered to be quite moderate, but is nonetheless greater than would be found in the adjoining intensively farmed arable land. The majority of species are associated with the perimeter hedgerows.

Other common floral and faunal elements, because of their widespread distribution, are likely to occur at times, or in the case of some birds and mammals occasionally visit the site. Although other plant and animal species could be added to the inventory of identified species by surveying at other times, this is considered unnecessary given the existing scale of disturbance on the site.

Apart from Peregrine Falcon (*Falco peregrinus*), all the plant and animal species identified at the application site are common throughout Ireland and in the general area.

No protected, endangered or rare species, other than Peregrine Falcon (*Falco peregrinus*), were found on the site.

It is recommended that the following program of mitigation measures be implemented to eliminate and minimise the impact of the development on the flora and fauna of the site over the operational life of the proposed waste recovery facility:

i. A suitable roosting and nesting area for the Peregrine Falcon should be retained on one area of existing cliff face so as to provide a suitable roosting and nesting area.

ii. When the level of backfilling approaches that of the surrounding land, layers of subsoil should be deposited followed by a final layer of organic, well drained topsoil. The topsoil should be seeded with a suitable grass seed mix to produce pasture. This will serve to stabilise the soil surface and prevent excessive soil erosion and wash-out of fines;

iii. In order to retain landscape connectivity and minimise loss of potential nesting sites for birds, existing boundary hedgerows should be retained. Retention of boundary hedgerows will also serve as a visual and acoustic barrier;

iv. To ensure the continued biodiversity of boundary hedgerows, backfilling and restoration operations in close proximity to existing hedgerows should also be of minimum duration possible;

v. Where removal of any shrubs or scrub within the application site is necessary, these works should take place between the months of September and March to avoid the bird nesting season;

vi. If and where practicable, the loss of internal shrubs or hedgerows within the site should be compensated by re-planting following restoration of site to pre-extraction ground levels. Any new planting should comprise a mixture of native tree and shrub species consistent with species readily found in the local area.

vii. The mitigation measures set out in Chapters 7 and 8 of this Environmental Impact Statement should be implemented. Dust and noise emissions from the application site will comply with the recommended DoEHLG (2004) and EPA (2000) emission limit values. Implementation of these measures shall ensure that there will be minimal adverse indirect noise and dust impacts on flora and fauna arising from backfilling and site restoration activities.

viii. Following the completion of backfilling operations, the application site will be restored to agricultural use. This will ensure that land use at the site is in keeping with the character of the surrounding area.

4. 5 RESIDUAL IMPACTS

Provided that all the mitigation measures proposed above are implemented, the overall residual impact of the proposed development on flora and fauna from an ecological standpoint is assessed to be a *moderate negative* impact on a resource of local (higher) value over the operational phase.

In the longer-term, after completion of backfilling activities, the overall residual impact of the scheme is assessed to be a *neutral* impact.

REFERENCES

Hayden, T. and Harrington, R. (2000) *Exploring Irish Mammals*

Heath, J; Pollard, E. and Thomas, J. A. (1982) *Atlas of the Butterflies in Britain and Ireland*,

Peterson, R.; Mountfort, G. and Hollom, P.A.D. (1967) *A Field Guide to the Birds of Britain and Europe*

Stace, C. (1997) *New Flora of the British Isles*, 2nd edition

Scannell, M.J.P. and Synnott, D.M. (1987) *Census Catalogue of the Flora of Ireland*

APPENDIX 4.1

INVENTORY OF FLORA AND FAUNA

Flora and fauna lists from the application area based on a surveys undertaken on 15th May 2008 and 28th May 2014..

Plants (Flora)

Scientific Name	Common Name	2008	2014
Acer campestris	Field Maple	✓	✓
Acer pseudoplatanus	Sycamore	✓	✓
Achillea millefolium	Yarrow	✓	✓
Agrostis stolonifera	Creeping Bent		✓
Alnus incana	Grey Alder	✓	✓
Anagallis arvensis	Scarlet Pimpernel	✓	✓
Anthyllis vulneraria	Kidney Vetch	✓	✓
Anthriscus caucalis	Bur Chervil	✓	✓
Anthriscus sylvestris	Cow Parsley	✓	✓
Aquilegia sp. (cultivar)	Columbine	✓	✓
Armeria sp. (cultivar)	Thrift	✓	✓
Arrhenatherum elatius	False Oat-grass		✓
Bellis perennis	Daisy	✓	✓
Brassica sp.	Mustard	✓	✓
Buddleja davidii	Butterfly-bush	✓	✓
Calystegia sepium	Hedge Bindweed	✓	✓
Carex flacca	Glaucous Sedge		✓
Carex pendula	Pendulous Sedge		✓
Centaurea nigra	Common Knapweed	✓	✓
Centranthus ruber	Red Valarian		✓
Cerastium fontanum	Common Mouse-ear		✓
Chamerion angustifolium	Rosebay Willowherb		✓
Cirsium vulgare	Spear Thistle	✓	✓
Corylus avellana	Hazel	✓	✓
Cotoneaster sp.	Cotoneaster	✓	✓
Crataegus monogyna	Hawthorn	✓	✓
Cupressocyparis leylandii	Leyland Cypress	✓	✓
Dactylis glomerata	Cock's-foot		✓
Daucus carota ssp. *carota*	Wild Carrot		✓
Epilobium hirsutum	Great Willowherb	✓	✓
Epilobium montanum	Broad-leaved Willowherb		✓
Equisetum arvense	Field Horsetail	✓	✓
Euphorbia helioscopia	Sun Spurge	✓	✓
Festuca rubra agg.	Red Fescue		✓
Fraxinus excelsior	Ash	✓	✓
Galim verum	Lady's Bedstraw		✓
Glyceria fluitans	Floating Sweet-grass		✓
Griselinia littoralis (cultivar)	New Zealand Broadleaf	✓	✓
Hedera helix	Ivy	✓	✓
Heracleum sphondylium	Hogweed	✓	✓
Hieracium sp. (aggregate)	Hawkweed	✓	✓
Holcus lanatus	Yorkshire-fog		✓
Juncus inflexus	Hard Rush		✓
Lathyrus pratensis	Meadow Vetchling		✓
Leucanthemum vulgare	Oxeye Daisy	✓	✓
Lotus corniculatus	Common Bird's-foot-trefoil	✓	✓
Tripleurospermum inodorum	Scentless Mayweed	✓	✓
Narcissus sp. (cultivar)	Daffodil	✓	✓

Scientific Name	Common Name	2008	2014
Papaver rhoeas	Common Poppy	✓	✓
Asplenium scolopendrium	Hart's-tongue Fern	✓	✓
Picea abies	Norway Spruce	✓	✓
Plantago lanceolata	Ribwort Plantain	✓	✓
Populus sp.	Poplar	✓	✓
Potentilla reptans	Creeping Cinquefoil	✓	✓
Primula vulgaris	Primrose	✓	✓
Prunella vulgaris	Selfheal		✓
Prunus sp. (cultivar)	Cherry	✓	✓
Pteridium aquilinum	Bracken	✓	✓
Ranunculus acris	Meadow Buttercup	✓	✓
Ranunculus repens	Creeping Buttercup	✓	✓
Reseda luteola	Weld	✓	✓
Rubus fruticosus	Bramble	✓	✓
Rumex acetosa	Common Sorrel	✓	✓
Salix sp. (aggregate)	Willow	✓	✓
Salix caprea	Goat Willow		✓
Sambucus nigra	Elder	✓	✓
Senecio jacobaea	Common Ragwort	✓	✓
Senecio vulgaris	Groundsel	✓	✓
Smyrnium olusatrum	Alexanders	✓	✓
Sonchus oleraceus	Smooth Sow-thistle	✓	✓
Sorbus aucuparia	Rowan	✓	✓
Symphytum sp. (cultivar)	Comfrey	✓	✓
Syringa vulgaris	Lilac	✓	✓
Taraxacum officinale agg.	Dandelion	✓	✓
Trifolium campestre	Hop Trefoil	✓	✓
Trifolium pratense	Red Clover	✓	✓
Trifolium repens	White Clover	✓	✓
Tussilago farfara	Colt's-foot	✓	✓
Ulex europaeus	Gorse	✓	✓
Urtica dioica	Common Nettle	✓	✓
Veronica chamaedrys	Germander Speedwell	✓	✓
Vicia sativa	Common Vetch		✓
Vicia sepium	Bush Vetch	✓	✓
Vinca sp. (cultivar)	Periwinkle	✓	✓
Viola riviniana	Common Dog-violet	✓	✓

Aviformes (Birds)

Scientific Name	Common Name	2008	2014
Columba palumbus	Woodpigeon	✓	✓
Corvus frugilegus	Rook	✓	✓
Corvus monedula	Jackdaw	✓	✓
Cyanistes caeruleus	Blue Tit	✓	✓
Erithacus rubecula	Robin	✓	✓
Falco peregrinus	Peregrine Falcon	✓	
Fringilla coelebs	Chaffinch		✓
Gallinula chloropus	Moorhen		✓
Hirundo rustica	Swallow	✓	✓
Parus major	Great Tit		✓
Phasianus colchicus	Pheasant	✓	✓
Phylloscopus trochilus	Willow Warbler	✓	✓

Scientific Name	Common Name	2008	2014
Pica pica	Magpie	✓	✓
Prunella modularis	Dunnock	✓	✓
Riparia riparia	Sand Martin	✓	
Streptopelia decaocto	Collared Dove	✓	✓
Sturnus vulgaris	Starling		✓
Troglodytes troglodytes	Wren	✓	✓
Turdus merula	Blackbird	✓	✓
Turdus philomelos	Song Thrush	✓	✓

Mammals

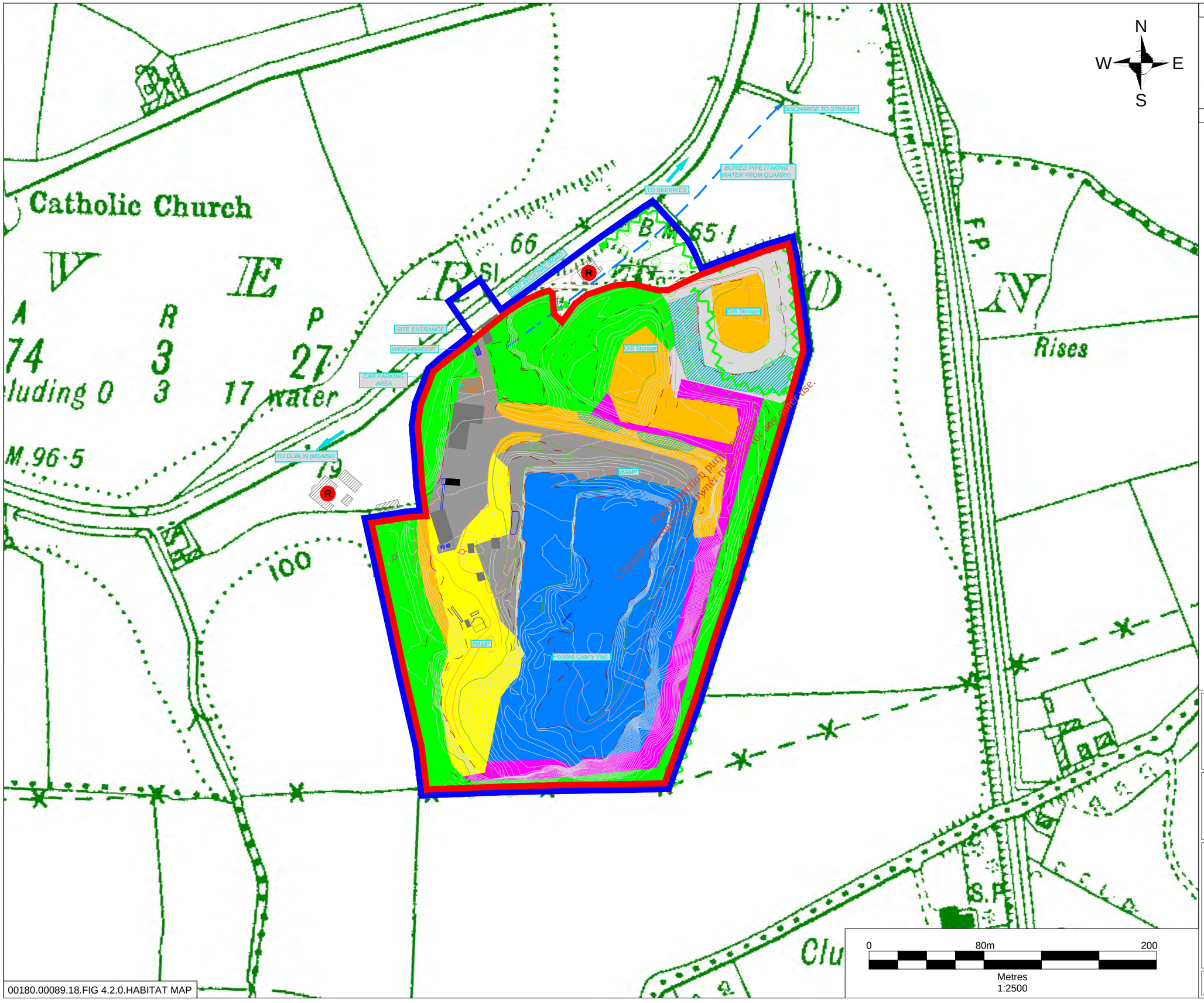
Scientific Name	Common Name	2008	2014
Rattus norvegicus	Brown Rat	✓	
Lepus timidus	Mountain or Irish Hare	✓	
Vulpes vulpes	Fox	✓	✓
Oryctolagus cuniculus	Rabbit	✓	✓

Insects – Butterflies (Lepidoptera)

Scientific Name	Common Name	2008	2014
Anthocaris cardamines	Orange Tip	✓	✓
Celastrina argiolus	Holly Blue	✓	✓
Pararge aegeria	Speckled Wood	✓	
Pieris napi	Green-veined White	✓	

Insects – Dragonflies and Damselflies (Odonata)

Scientific Name	Common Name	2008	2014
Enallagma cyathigerum	Common Blue Damselfly		✓
Ischura elegans	Blue-tailed Damselfly		✓



NOTES

1. Based on OSi 25inch Dublin Sheet No. 5 & 5a

2. Ordnance Survey of Ireland Licence No. SU 0000714 (c) Ordnance Survey of Ireland & Government of Ireland

LEGEND

- *Applicant's Land Interest (c. 8.6ha)*
- *Waste Licence Application Area (c. 7.9ha)*
- *QUARRY FACE (EXPOSED CACAREOUS ROCK)*
- *SCRUB*
- *Hedgerow*
- *BARE & RECOLONISED BARE GROUND*
- *OPEN STANDING WATER*
- *DRY GRASSLAND*
- *PLANTATION WOODLAND*
- *ARTIFICIAL SURFACE*
- *BUILDINGS*

roadstone

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

ROADSTONE LTD.
WASTE LICENCE APPLICATION

WASTE RECOVERY FACILITY,
MILVERTON, SKERRIES, CO. DUBLIN

HABITAT MAP

FIGURE 4.2

Scale	Date
1:2,500 @ A3	JUNE 2014

00180.00089.18.FIG 4.2.0.HABITAT MAP

SPA 004014
Rockabill

SPA 004122 / NHA 001218
Skerries Islands

pNHA 002000
Loughshinny Coast

SAC 003000
Rockabill to Dalkey Island

SPA 004015 / SAC 000208
Rogerstown Estuary

N
W E
S

0 100 200 300 400m 600 800 1000
Metres
1:10,000

NOTES

1. Based on OSi 25inch Dublin Sheet No. 5 & 5a

2. Ordnance Survey of Ireland Licence No. SU 0000714 (c) Ordnance Survey of Ireland & Government of Ireland

LEGEND

- Applicant's Land Interest (c. 8.6ha)
- Waste Licence Application Area (c. 7.9ha)
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Natural Heritage Area (NHA)
- 2km & 5km Radius from the Site
- Proposed Natural Heritage Area (pNHA)

roadstone

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

ROADSTONE LTD.
WASTE LICENCE APPLICATION

WASTE RECOVERY FACILITY,
MILVERTON, SKERRIES, CO. DUBLIN

DESIGNATED SITES

FIGURE 4.1

Scale 1:10,000 @ A3

Date JUNE 2014

00180.00089.18.FIG 4.1.0.DESIGNATED SITES

EPA Export 26-06-2014:23:39:54