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Huntstown Quarry,
Finglas, Dublin

Planning Application for the Continuance of Use of the
Quarry and Ancillary Processing
and Manufacturing Facilities at Huntstown Quarry

Natura Impact Statement:
Stage 1 Screening Assessment

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1.0 INTRODUCTION

1.1 Background

This report provides a Natura Impact Statement (NIS) Stage 1 Screening Assessment to identify any likely significant effects on Natura 2000 sites from the continuation of quarrying operations and ancillary processing and manufacturing facilities at Huntstown Quarry, Finglas, Dublin.

It has been prepared by SLR Consulting Ireland (SLR) on behalf of Roadstone Wood Limited (RWL) to support their planning application for the continuance of use of the existing quarry and ancillary processing and manufacturing facilities at Huntstown Quarry.

1.2 Appropriate Assessment Overview

The requirements for an Appropriate Assessment are set out under Article 6 of the EU Habitats Directive (92/34/EEC) transposed into Irish law through The European Communities (Birds and Natural Habitats) Regulations 2011 that requires a Competent Authority to make an Appropriate Assessment of the implications for Natura 2000 sites in view of a site's conservation objectives, before deciding to undertake, or give consent, permission or other authorisation for, a plan or project which:

- i. is not directly connected with or necessary to the management of that site; and
- ii. is likely to have a significant effect thereon, either individually or in combination with other plans and projects in view of its conservation objectives.

The European Commission's methodological guidance¹ promotes a four stage process, as set out below, to complete an Appropriate Assessment:

- Stage 1 – Screening for Appropriate Assessment;
- Stage 2 – Appropriate Assessment;
- Stage 3 – Alternative Solutions; and
- Stage 4 – The 'IROPI Test' (Imperative Reasons of Overriding Public Interest).

A person applying for any such consent, permission or other authorisation must provide such information in Stage 1, as the competent authority may reasonably require, for the purposes of the assessment or to enable them to determine whether an Appropriate Assessment is required.

In considering whether a plan or project will adversely affect the integrity of any Natura 2000 site or sites, the Competent Authority should consider whether the effects of the proposal on the site or sites, either individually or in combination with other plans or projects, is likely to be significant in terms of the conservation objectives and in respect of each interest feature for which the site was designated a Special Area of Conservation (SAC) under the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive), or classified a Special Protection Area (SPA) under the EEC Council Directive on the Conservation of Wild Birds (Directive 79/409/EEC – The Birds Directive), or Ramsar site under the Ramsar Convention.

¹ European Communities (2002). *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Methodological Guidance on the Provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Communities, Luxembourg.

In the light of the conclusions of the assessment, and in consideration of Imperative Reasons of Overriding Public Interest (IROPI), the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the Natura 2000 site.

1.3 Purpose of this Report

This report has been produced to provide a screening statement, as required under Stage 1 of the Appropriate Assessment process, and includes all relevant information to the competent authority (in this case Finglas County Council) in order for them to determine whether the continuance of use of the existing quarry at Huntstown is likely to have a significant effect on the integrity of any Natura 2000 site, or sites, within its zone of influence and whether there is a requirement for an Appropriate Assessment (Stage 2 Assessment) to be undertaken.

1.4 Ecologist and Experience

The Screening Assessment has been conducted by Steve Judge who is a Senior Ecologist with 11 years experience in ecological consultancy and a member of the Institute of Ecology and Environmental Management (IEEM). All work produced is subject to technical review and Quality Assurance.

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2.0 METHODOLOGY

2.1 Baseline Data Collection

Baseline information was gathered through a combination of desk-based study and technical assessments consistent with current standard methodologies and published best practice guidelines, in order to provide relevant data to allow an assessment of likely significant effects of quarrying operations at Huntstown on any individual Natura 2000 site, or sites, within the zone of influence of this quarry site.

The principal source of information on key qualifying features has been data collected through information publically available through the National Parks and Wildlife Service (NPWS)², Office of Public Works (OPW) and other relevant sources.

2.2 Assessment Likely Significant Effects

Under the Habitat Regulations, the first test that has to be considered is whether the development, either alone or in combination with other relevant projects and plans, would be likely to have a significant effect. Effects are judged to be significant where they affect the integrity of the site with respect to the conservation objectives of the features for which the site was designated/classified.

The purpose of Stage 1 is two parts, firstly to screen out those aspects of the proposal that can be considered not likely to have a significant effect, and secondly to screen the key qualifying features of the designation that are not likely to be significantly affected by the proposal.

In order to undertake an appropriate screening, the guidance produced by the NPWS in 2009³ has been followed in order to:

- characterise the potential impacts to the qualifying interests of any Natura 2000 site or sites that may result from the quarrying operations at Huntstown;
- assess the likely significance of potential impacts on the qualifying interests of any Natura 2000 site or sites within the zone of influence of the quarry site; and
- assess the risk of an adverse effect on the integrity of the site or occurring to a qualifying interest feature for which the site is of European interest.

The methodology for the assessment of impacts is derived from the guidelines published by the Institute of Ecology and Environmental Management (IEEM)⁴. Impacts are characterised in terms of whether specific hazards emanating from the project are likely to have potential significant effects on the integrity of a defined ecosystem and/or conservation status of individual habitats or species for which a site is of European interest, and on site as a whole.

2.3 Ascertaining the Threat to Site Integrity

The Competent Authority will be required to determine whether the existing quarrying operations at Huntstown would adversely affect the integrity of any Natura 2000 site, or

² <http://www.npws.ie>

³ NPWS (2009 revised February 2010). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin.

⁴ Institute of Ecology and Environmental Management (2006). *Guidelines for Ecological Impact Assessment in the United Kingdom*.

sites, in light of the conservation objectives for that particular site or sites. The integrity of a site is defined as:

“The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated/classified.”

Further to the above, an adverse effect on integrity can also be defined as one that is likely to prevent the site from making the same contribution to favourable conservation status for the relevant features as it did at the time of its classification/designation.

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3.0 DESCRIPTION OF THE PROJECT

3.1 Location and Setting

Huntstown Quarry is a large operational limestone quarry with an extraction area covering 55.9 hectares (ha) within a total landholding covering 211ha. The quarry has been worked since the early 1970's. It is understood that quarrying at the northern and central areas was commenced at some time in the early 1970's, on foot of a planning permission granted in 1973.

The site comprises four main extraction areas (i.e. north quarry, central quarry, south quarry and western quarry); an area that contains the ancillary infrastructure of the quarrying operations including offices, workshops and concrete and asphalt production plants; access routes; remnant former fields and areas of overburden stripped from the extraction areas that has been utilised for the provision perimeter screening bunds.

The north quarry has undergone progressive restoration over a number of years with inert materials being used to infill parts of the former quarry void.

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.

3.2 Outline Description of Project

A 10 year planning permission (Ref. No. 93A/1734 and P06F.092622) was granted in 1994 to continue quarrying and for production of related concrete materials. Planning permission for the existing construction and demolition waste recycling facility in the centre of the quarry complex was granted in 2002 (Ref. No. F02A/0602 and PL06F.200623). Planning permission was granted in 2004 for continuation of quarrying for a further 10 year period (Ref. No. F03A/1430 and PL06F.206789).

The quarry was registered with Fingal County Council in accordance with the requirements of Section 261 of the Planning & Development Act, 2000.

Rock is extracted using conventional blasting techniques and processed using mobile and fixed crushing and screening plant located within the existing quarry. The crushed rock is then sold commercially as aggregate and also used in the existing concrete & tarmacadam manufacturing facilities on site.

The current planning application involves the continuation of quarrying operations and associated ancillary processing and manufacturing facilities at the existing Huntstown Quarry.

The quarry straddles two river catchments, with the northern part of the quarry discharging to the Ballystrahan Stream a sub-catchment of the River Ward whilst the southern part of the quarry discharges into the Finglas Stream a sub-catchment of the Tolka River. Two surface watercourses drain from the site and are used as part of the surface water management system for the discharge of treated groundwater and surface waters emanating from the quarry site.

4.0 NATURA 2000 SITES

There are eleven Natura 2000 sites within a 15km radius of Huntstown Quarry. These sites are listed Table 1 and their locations shown in Figure 1.

Table 1: Natura 2000 Sites within a 15km Radius of Proposed Development

Natura 2000 Site	Site Code	Location
South Dublin Bay and River Tolka SPA	004024	8.41km southeast at closest point
Malahide Estuary SAC	000205	9.99km northeast at closest point
Malahide Estuary SPA	004025	10.02km northeast at closest point
North Dublin Bay SAC	000206	10.86km southeast at closest point
North Bull Island SPA and Ramsar Site	004006	10.86km southeast at closest point
South Dublin Bay SAC	000210	11.05km southeast at closest point
Rye Water Valley/Carton SAC	001398	11.08km southwest at closest point
Baldoyle Bay SAC	000199	12.01km east at closest point
Baldoyle Bay SPA and Ramsar Site	004016	12.06km east at closest point
Rogerstown Estuary SAC	000208	13.07 km northeast at closest point
Rogerstown Estuary SPA	004015	13.68km northeast at closest point

4.1 Potential Zone of Influence of Development and AA Screening

All of the Natura 2000 sites identified in Table 1 are of a sufficient distance from Huntstown Quarry that they would not be affected by any direct loss of habitat at these sites, effects of disturbance (i.e. noise, vibration and human and visual disturbance) or the effects of dust deposition.

Given the distances of the Natura 2000 sites, the only potential source-pathway-receptor link between the continuation of quarrying operations at Huntstown Quarry and these European sites is via the hydrological pathways created through the discharges made to the two watercourses draining from the northern and southern part of the quarry site and lying in the catchments of the River Ward and River Tolka respectively.

Based on the above, the following Natura 2000 sites are screened out from any further assessment as there will be no source-pathway-receptor link between the continuation of quarrying operations at Huntstown and these European sites:

- Rye Water Valley/Carton SAC;
- Baldoyle Bay SAC;
- Baldoyle Bay SPA and Ramsar Site;
- Rogerstown Estuary SAC; and
- Rogerstown Estuary SPA.

This leaves South Dublin Bay and River Tolka SPA, South Dublin Bay SAC, North Dublin Bay SAC and North Bull Island SPA/Ramsar Site that a source-pathway-receptor link from the discharge from the southern part of Huntstown Quarry to a tributary stream of the River Tolka, that outflows through the Tolka Estuary and into Dublin Bay.

Similarly, Malahide Estuary SAC and Malahide Estuary SPA have a source-pathway-receptor link from the surface water discharge from the northern Part of Huntstown Quarry to the Ballystrahan Stream a tributary of the River Ward that outflows into the Malahide Estuary.

Therefore the following Natura 2000 sites are screened in at this stage as having the potential to be directly and indirectly affected by the continuation of quarrying operations at Huntstown Quarry:

- South Dublin Bay and River Tolka SPA;
- South Dublin Bay SAC;
- North Dublin Bay SAC;
- North Bull Island SPA/Ramsar Site
- Malahide Estuary SAC; and
- Malahide Estuary SPA.

A summary of the qualifying features, conservation objectives and vulnerabilities of each of these Natura 2000 sites is provided in Table 2.

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Table 2: Natura 2000 Site Information

Natura 2000 Site	Qualifying Features	Conservation Objectives	Vulnerabilities and Threats
South Dublin Bay and River Tolka Estuary SPA (2194.11ha)	<ul style="list-style-type: none"> • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>); • Oystercatcher (<i>Haematopus ostralegus</i>); • Ringed Plover (<i>Charadrius hiaticula</i>); • Grey Plover (<i>Pluvialis squatarola</i>); • Knot (<i>Calidris canutus</i>); • Sanderling (<i>Calidris alba</i>); • Dunlin (<i>Calidris alpina</i>); • Bar-tailed Godwit (<i>Limosa lapponica</i>); • Redshank (<i>Tringa totanus</i>); • Black-headed Gull (<i>Croicocephalus ridibundus</i>); • Roseate Tern (<i>Sterna dougallii</i>); • Common Tern (<i>Sterna hirundo</i>); • Arctic Tern (<i>Sterna paradisaea</i>); and • Wetlands & Waterbirds. 	The conservation objectives for the South Dublin Bay and Tolka Estuary SPA are to maintain or restore the favourable conservation condition of the birds species listed as Special Conservation Interests for this SPA as detailed above.	<ul style="list-style-type: none"> • leisure fishing; • leisure fishing - bait digging; • urbanised areas, human habitation; • industrial or commercial areas; • discharges; • routes, autoroutes; • nautical sports • walking, horse-riding and non-motorised vehicles; • reclamation of land from sea, estuary or marsh; and • eutrophication.

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Natura 2000 Site	Qualifying Features	Conservation Objectives	Vulnerabilities and Threats
South Dublin Bay SAC (742.12ha)	<ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide. 	<p>The conservation objectives for the South Dublin Bay SAC are to maintain or restore the favourable conservation condition of Annex I habitat(s) and/or Annex II species for which the SAC has been selected as detailed above.</p>	<ul style="list-style-type: none"> leisure fishing - bait digging; urbanised areas, human habitation; industrial or commercial areas; discharges; routes, autoroutes nautical sports walking, horse-riding and non-motorised vehicles; reclamation of land from sea, estuary or marsh; drying out/accumulation of organic material; and eutrophication.
North Dublin Bay SAC (1474.98ha)	<ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Salicornia and other annuals colonizing mud and sand; Spartina swards (<i>Spartinion maritimae</i>); Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>); Petalwort (<i>Petalophyllum ralfsii</i>); Mediterranean salt meadows (<i>Juncetalia maritimi</i>); Embryonic shifting dunes; Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); and Humid dune slacks. 	<p>The conservation objectives for the South Dublin Bay SAC are to maintain or restore the favourable conservation condition of Annex I habitat(s) and/or Annex II species for which the SAC has been selected, as detailed above.</p>	<ul style="list-style-type: none"> grazing leisure fishing leisure fishing - bait digging; urbanised areas, human habitation; industrial or commercial areas; discharges; golf course nautical sports walking, horse-riding and non-motorised vehicles; water pollution; and invasion by a species.

Natura 2000 Site	Qualifying Features	Conservation Objectives	Vulnerabilities and Threats
North Bull Island SPA/Ramsar Site (1944.30ha)	<ul style="list-style-type: none"> • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>); • Shelduck; Teal (<i>Anas crecca</i>); • Pintail (<i>Anas acuta</i>); • Shoveler (<i>Anas clypeata</i>); • Oystercatcher (<i>Haematopus ostralegus</i>); • Golden Plover (<i>Pluvialis apricaria</i>); • Grey Plover (<i>Pluvialis squatarola</i>); • Knot (<i>Calidris canutus</i>); • Sanderling (<i>Calidris alba</i>); • Dunlin (<i>Calidris alpina</i>); • Black-tailed Godwit (<i>Limosa limosa</i>); • Bar-tailed Godwit (<i>Limosa lapponica</i>); • Curlew (<i>Numenius arquata</i>); • Redshank (<i>Tringa totanus</i>); • Turnstone (<i>Arenaria interpres</i>); • Black-headed Gull (<i>Croicocephalus ridibundus</i>); and • Wetlands & Waterbirds. 	<p>The conservation objectives for the North Bull Island SPA are to maintain or restore the favourable conservation condition of the birds species listed as Special Conservation Interests for this SPA as detailed above.</p>	<ul style="list-style-type: none"> • leisure fishing - bait digging; • continuous urbanisation; • other patterns of habitation; • urbanised areas, human habitation; • industrial or commercial areas; • discharges; • routes, autoroutes; • bridge, viaduct; • shipping; • golf course • interpretative centres; • nautical sports • walking, horse-riding and non-motorised vehicles; and • water pollution.

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Natura 2000 Site	Qualifying Features	Conservation Objectives	Vulnerabilities and Threats
Malahide Estuary SAC (809.69ha)	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide; • Salicornia and other annuals colonizing mud and sand; • Spartina swards (<i>Spartinion maritimae</i>); • Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>); • Mediterranean salt meadows (<i>Juncetalia maritim</i>); • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); and • Fixed coastal dunes with herbaceous vegetation (grey dunes). 	<p>The conservation objectives for the North Bull Island SPA are to maintain or restore the favourable conservation condition of the birds species listed as Special Conservation Interests for this SPA as detailed above.</p>	<ul style="list-style-type: none"> • fertilisation; • urbanised areas, human habitation; • industrial or commercial areas; • paths, tracks, cycling tracks; • railway lines; • bridge, viaduct; • nautical sports • walking, horse-riding and non-motorised vehicles; • water pollution; • reclamation of land from sea, estuary or marsh; and • acidification.

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Natura 2000 Site	Qualifying Features	Conservation Objectives	Vulnerabilities and Threats
Malahide Estuary SPA (764.96ha)	<ul style="list-style-type: none"> • Great Crested Grebe (<i>Podiceps cristatus</i>); • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>); • Shelduck; Teal (<i>Anas crecca</i>); • Pintail (<i>Anas acuta</i>); • Goldeneye (<i>Bucephala clangula</i>); • Red-breasted Merganser (<i>Mergus serrator</i>); • Oystercatcher (<i>Haematopus ostralegus</i>); • Golden Plover (<i>Pluvialis apricaria</i>); • Grey Plover (<i>Pluvialis squatarola</i>); • Knot (<i>Calidris canutus</i>); • Dunlin (<i>Calidris alpina</i>); • Black-tailed Godwit (<i>Limosa limosa</i>); • Bar-tailed Godwit (<i>Limosa lapponica</i>); • Redshank (<i>Tringa totanus</i>); and • Wetlands & Waterbirds. 	The conservation objectives for the Malahide SPA are to maintain or restore the favourable conservation condition of the birds species listed as Special Conservation Interests for this SPA as detailed above.	<ul style="list-style-type: none"> • fertilisation; • professional fishing; • hunting • urbanised areas, human habitation; • routes, autoroutes; • golf course; • nautical sports • walking, horse-riding and non-motorised vehicles; • water pollution; and • reclamation of land from sea, estuary or marsh.

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5.0 STAGE 1: SCREENING OF POTENTIAL HAZARDS

Likely significant effects are defined in terms of predicted changes to the baseline conditions of one or more of the qualifying interest features for which a Natura 2000 site was classified or designated whether negative or positive, and which can be directly and/or indirectly attributable to the quarrying operations at Huntstown Quarry, either alone or in-combination with other plans or projects.

As identified in Section 4.1, there would be no direct loss of habitat at any Natura 2000 site or sites, no effects of disturbance (i.e. noise, vibration and visual disturbance, and no effects from the deposition of dust as a result of the continuation of quarrying operations at Huntstown due to the distance of the European sites from the quarry site.

Based on the hydrological pathways linking Huntstown Quarry to the Malahide and Tolka estuaries and their associated Natura 2000 sites via the point source discharges from the northern and southern sections of the quarry respectively, the following hazards have been identified with the potential to affect these Natura 2000 sites:

- changes to the hydrological regime; and
- changes to water quality (i.e. toxic contamination, pH, nutrient and organic enrichment, and sedimentation).

A discharge is considered likely to have an adverse effect if it can be shown that it has the potential to cause, or is likely to be attributable to, the failure of environmental water quality standards for the receiving waters at any of the identified Natura 2000 sites.

Where the environmental water quality standards are already being failed in the receiving waters at these European sites, it is important that any alteration in water quality caused by a discharge is considered, whether this is a deterioration or improvement of water quality. A significant effect is considered likely where any of the discharges would lead to a deterioration of, or improvement of, water quality by >1% of any environmental water quality standards. It is important to note that the alteration in water quality is measured at the Natura 2000 site and not at the point of discharge.

For the purpose of this screening assessment no distinction has been made for each individual Natura 2000 site but rather on the receiving waters of the Malahide and Tolka estuaries as whole entities and for which environmental water quality standards have been set for these transitional waters.

5.1 Existing Water Management System

The existing water management system is an integral part of the quarrying operations at Huntstown and is comprised of the following main elements:

1. Incidental Rainfall and Surface Water Run-off. Rainfall infiltrates to ground across the majority of the quarry site. Surface water run-off from roads, hard-standing and roof areas is allowed to infiltrate to ground. In the quarry excavations surface water run-off is routed via channels to the main quarry sumps.
2. Groundwater. Groundwater input to quarry excavation areas is routed by channels to the main quarry sumps.
3. Process Water. Process water is used in crushing and screening plant to assist in the processing of materials and to prevent dust generation. The process

water for crushing and screening is sourced from the northern quarry sump whilst for the manufacturing of concrete products is sourced from the surface water discharge from the northern part of the quarry.

4. **Water Treatment.** An existing proprietary on site waste water treatment system treats all foul water from the site. Water from the quarry voids is treated through a series of dedicated settlement lagoons to allow for the removal of sediments prior to discharge from the site. The settlement lagoon system for the South Quarry discharge was constructed in late 2009 and has been fully operational at the site from 2010 onwards. In addition, an oil interceptor has been installed adjacent to the bunded fuel storage area and hard stand refuelling area in the central processing area, with treated runoff directed to the central quarry void area.
5. **Discharge.** Water in the quarry voids (incidental rainwater, surface water run-off and groundwater) is pumped from the main quarry sumps to settlement lagoons for treatment prior to being discharged. The water discharged from the northern part of the quarry to the Ballystrahan Stream comprises of incidental rainwater, groundwater from the North quarry as well as treated surface water runoff from around the concrete and asphalt production plants. Treated water discharged from the southern quarry to the Finglas Stream comprises incidental rainwater and groundwater only. The discharge of treated water from the North Quarry is licenced by Fingal Co. Council (Ref. No. WPW/F/008-01). Roadstone Wood applied for a Discharge Licence for the discharge of treated water from the South Quarry to the Finglas Stream in June 2012. Further Information was submitted in support of the application in September 2012 and Roadstone Wood is currently waiting on the Discharge Licence to be signed and issued by Fingal Co. Council (as of early November 2012).

5.2 Changes to the Hydrological Regime

Changes in the hydrological regime can have a range of direct and indirect impacts on both habitats and species on not only the aquatic environments but also terrestrial environments for example a reduction in area of a particular habitat-type area or altering a habitat-type.

5.2.1 Malahide Estuary

The Malahide Estuary, situated between the towns of Malahide and Swords, covers an area of approximately 3.4km² in size. Five watercourse, namely the Broadmeadow River, Turvey River, River Ward, Gaybrook Stream and Lissenhall Stream, flow out to the Irish Sea via this estuary.

The Malahide Estuary has a tidal range in the region of 4m, however, where the Dublin to Belfast rail line crosses the estuary this has caused the impoundment of the inner estuary basically creating two bodies of water, which limits the tidal impact west of this feature (Broadmeadow Water) whilst to the east the estuary almost completely drains at low tide (Malahide Bay).

The discharge of incidental rainwater and groundwater from the North and Central Quarries as well as treated wastewaters from the concrete and asphalt production plants is to the Ballystrahan Stream (catchment c.7km²), a tributary of the River Ward, one of the five watercourse flowing into the Malahide Estuary, with a catchment area of c.152km².

Under Discharge Licence WPW/F008-01, the maximum volume of the discharge to the Ballystrahan Stream is set at 1800m³/day (0.021m³/s) over any 24 hour period. Whilst there is no primary flow gauge data for the Ballystrahan Stream, an estimation of the mean annual

maximum flow for this watercourse has been calculated at Kilreesk Lane, St Margaret's at $1.09\text{m}^3/\text{s}$, based on the Institute of Hydrology's methodology to estimate mean annual maximum flows modified by Cawley and Cunnane for Irish small catchments⁵. The contribution of the quarry discharge is calculated to be approximately 1.9% of the mean annual maximum flows in the Ballystrahan Stream, based on the maximum volume limits set by the existing discharge licence.

Based on the size of the Ballystrahan sub-catchment, the contribution of the discharge to the flows in the Ballystrahan Stream and the daily volumes of tidal water flowing in and out of the Malahide Estuary, no significant alterations are predicted from the continued discharge from the northern part of the Huntstown Quarry on the daily flow rates experienced in these transitional waters.

Screening Assessment

No likely potential exposure to hazard and no significant adverse effect predicted on the integrity of either the Malahide Estuary SAC or the Malahide Estuary SPA and not likely to result in a measurable impact on any qualifying feature in light of the conservation objectives for these sites.

5.2.2 Tolka Estuary

The Tolka Estuary covering an area of approximately 3.6km^2 discharges to the Dublin Bay north of the Liffey Estuary.

The Tolka River has a catchment area of 152km^2 with the Finglas Stream sub-catchment, which receives the discharge of ground and surface water from the southern part of Huntstown Quarry, covering $c.8\text{km}^2$ of this total catchment area.

Manual flow measures taken on 23rd February 2010 at the quarry discharge, the Finglas Stream and in the River Tolka showed that the discharge from Huntstown accounted for c. 25% of the measured flow in the Finglas Stream and c. 1.5% in the Tolka River.

Based on the size of the contribution of the discharge to the flows in the Tolka River and the daily volumes of tidal water flowing in and out of the Tolka Estuary, no significant alterations are predicted from the continued discharge from the southern part of the Huntstown Quarry on the daily flow rates experienced in these transitional waters.

Screening Assessment

No likely potential exposure to hazard and no significant adverse effect predicted on the integrity of the South Dublin Bay and River Tolka SPA; the South Dublin Bay SAC; the North Dublin Bay SAC and North Bull Island SPA/Ramsar Site lying within the Tolka Estuary and not likely to result in a measurable impact on any qualifying feature in light of the conservation objectives for these sites.

5.3 Changes in Water Quality

Surface water discharges and diffuse pollution from surface water run-off can contribute to a reduction in water quality of any receiving watercourse through a net contribution of nutrients or contamination from a wide range of organic and inorganic compounds.

⁵ Cawley, A.M. and Cunnane, C. (2003). *Comment on Estimation of Greenfield Runoff Rates*. National Hydrology Seminar 2003.

The main hazards to changes in water quality are outlined below:

a. *Toxic Contamination*

Toxins include anything poisonous to living organisms. Toxins can kill or damage organisms or result in changes of behaviour.

The effects on species may be direct or indirectly on supporting species i.e. on a food source of a particular bird species. An effect on a food source may cause a reduction in abundance of prey, change in the composition of prey species, or the palatability of prey through tainting.

For freshwaters, the discharge is likely to have a significant effect if it is liable to pollute with any particular substance and calculated to cause an increase in the concentration in the receiving water at the point of discharge of more than 10% of any environmental quality standards (EQS), the discharge is predicted to exceed the EQS downstream or a hazardous substance exceeds any general standard.

For tidal waters, a significant effect is likely to occur when the discharge is liable to contain a substance and the EQS would be exceeded after initial dilution, or the discharge is to an inter-tidal zone for which any initial dilution cannot be calculated.

b. *Changes in pH*

The effect of a discharge will depend on the buffering capacity of the receiving watercourse. A reduction in pH may increase the solubility and toxicity of metals. An increase in pH may decrease the toxicity of some organic compounds.

At pH 8 bicarbonate is the predominant form of carbonate. Below pH 6 carbon dioxide predominates, resulting in reduced calcification with consequently effects on molluscs which in turn may affect prey sources for individual species of birds.

c. *Nutrient and Organic Enrichment*

Estuaries are highly individual environments with a range of physical, chemical and biological characteristics that alter their respective vulnerability and response to nutrient enrichment. Nutrients stimulate the growth of benthic and microscopic plants. Excessive algal growth can cause oxygen depletion and reduce water clarity which may result in changes in community structures. Organic enrichment can also result in reduced oxygen and produce anoxic sediments.

d. *Sedimentation*

Alterations in sedimentation rates can cover food for birds and kill macroinvertebrates or render them inaccessible. Increase in suspended solids can affect filter-feeding organisms through the clogging and damage to feeding and breathing organs. Young fish can also be affected by sediment becoming trapped in their gills. Fine sediments can smother gravel beds used by salmon for spawning.

Sedimentation may also affect turbidity levels associated with suspended solids affecting feeding behaviour of those birds and other animals that detect prey by sight. Increase turbidity can also result in reduced light penetration, which may affect photosynthesis that may affect directly invertebrates and other groups of species higher the food chain indirectly.

5.3.1 Malahide Estuary

In the latest assessment of water quality in Ireland⁶ the transitional waters of the Malahide Estuary are assessed as being “Potentially Eutrophic” under the EPA’s Trophic Status Assessment Scheme (TSAS) required for the Urban Waste Water Treatment Directive and Nitrates Directive whilst the Broadmeadow Water is assessed as “Eutrophic”. The Malahide Estuary also failed to comply with the EQS established for the Water Framework Directive (WFD) for dissolved inorganic nitrogen (DIN). In addition, the Broadmeadow Water had high winter and summer levels of molybdate reactive phosphorus (MRP). The main factors identified as affecting water quality are from diffuse agriculture pollution and wastewater and industrial discharges.

The EPA’s latest assessment of water quality in Ireland also shows the River Ward is classified as being of ‘Poor’ status with a median Q-rating of 2-3 (unsatisfactory). However, based on data within the Eastern River Board Programme of Measures 2009-2015⁷, the Ballystrahan Stream is assessed as having achieved “Good” status.

The results of water quality monitoring at the point of discharge to the Ballystrahan Stream from the northern part of the Huntstown Quarry are provided at Table 3. The results demonstrate that the discharge waters comply with limits set under the existing discharge licence.

Based on the sampling results, it is considered that the discharge of treated water from the northern part of the Huntstown Quarry has not had a significant impact upon water quality in the Ballystrahan Stream and the continuation of any such discharge would not affect the current ‘Good’ status of this stream nor would it either lead to a deterioration in the overall water quality in the River Ward and the transitional waters of the Malahide Estuary based on the EQS established under the WFD, or would be directly attributable to these waters not achieving “Good” status by 2027.

Screening Assessment

Potential exposure to hazard not likely and no significant adverse impact on current water quality predicted, or on the transitional waters of the Malahide Estuary achieving “Good” status by 2027, as a direct result of the discharge of water from Huntstown Quarry. Therefore no significant effects predicted on the integrity of either the Malahide Estuary SAC or the Malahide Estuary SPA and not likely to result in a measurable impact on any qualifying feature in light of the conservation objectives for these sites.

5.3.2 Tolka Estuary

In the latest assessment of water quality in Ireland (EPA 2010) the Tolka Estuary is assessed as being “Potentially Eutrophic” under the TSAS and breaching the EQS for MRP established for the WFD. In addition, the Tolka River is classified as being of ‘Poor’ status with a median Q-rating of 2-3 (unsatisfactory). The main factors identified as affecting water quality are from diffuse agriculture and urban pollution.

There is no information available on the water quality for the Finglas Stream that receives the discharge from the southern part of the Huntstown Quarry.

⁶ Environmental Protection Agency (2010). *Water Quality in Ireland 2007-2009*. Environmental Protection Agency, Wexford.

⁷ Eastern River Basin District (2009). *Eastern River District - Programme of Measures 2009-2015*.

The results of water quality monitoring at the point of discharge to the Finglas Stream from the southern part of the Huntstown Quarry are provided at Table 4. Whilst there is currently no discharge licence in place, the results show that generally the water quality of the wastewater being discharged to the Finglas Stream are comparable to the water discharged from the northern part of the quarry to the Ballystrahan Stream and it is considered are highly likely to be under any limits set under a discharge licence currently being applied for.

Based on the sampling results, it is considered that the discharge of treated water from the southern part of the Huntstown Quarry is unlikely to be having a significant adverse impact upon water quality in the Finglas Stream and the continuation of any such discharge would not affect the current status of this stream nor would it either lead to a deterioration in the overall water quality in the Tolka River and the transitional waters of the Tolka Estuary based on the EQS established under the WFD, or would be directly attributable to these waters not achieving "Good" status by 2027.

Screening Assessment

Potential exposure to hazard unlikely and no significant adverse impact on current water quality predicted, or on the transitional waters of the Tolka Estuary achieving "Good" status by 2027, as a direct result of the discharge of water from Huntstown Quarry. Therefore no significant effects predicted on the integrity of South Dublin Bay and River Tolka SPA; the South Dublin Bay SAC; the North Dublin Bay SAC and North Bull Island SPA/Ramsar Site lying within the Tolka Estuary and not likely to result in a measurable impact on any qualifying feature in light of the conservation objectives for these sites.

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Table 3: Water Quality Monitoring Results of Discharge Waters to the Ballystrahan Stream

Parameters	Discharge Limits (WPW/F/008-1)	Sampling Results (Year)									
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
No of Samples	-	17	23	21	13	11	11	12	11	12	6
pH	6 - 9	8.0	8.0	8.1	8.0	8.0	8.0	8.0	7.7	8.1	8.0
BOD (mg/l)	20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Suspended Solids (mg/l)	30	13.9	9.4	12.0	16.9	12.1	20.5	18.0	17.9	8.0	6.0
Temperature	25	11.3	10.9	11.5	10.8	12.0	12.8	10.3	11.7	10.0	8.8
Ammonia (NH ₄) (mg/l)	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (mg/l)	-	-	122	140	137	152	180	160	146	141	147
Phosphorus (mg/l)	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.07
Sulphate (mg/l)	-	-	161	193	213	214	235	248	236	219	214

Table 4: Water Quality Monitoring Results of Discharge Waters to the Finglas Stream

Parameters	Discharge Limits	Sampling Results (Year)									
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
No of Samples	-	11	23	22	15	9	11	12	6	8	4
pH	-	8.1	7.8	8.0	8.0	7.8	8.0	8.0	7.6	8.2	8.0
BOD (mg/l)	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Suspended Solids (mg/l)	-	5.5	8.5	3.6	5.5	3.2	4.5	15.1	35.5	7.0	6.0
Temperature	-	13.1	10.9	11.5	11.0	12.3	13.1	10.4	12.2	11.0	10.0
Ammonia (NH ₄) (mg/l)	-	-	<0.1	<0.1	<0.1	<0.1	0.20	0.22	0.69	<0.1	<0.1
Calcium (mg/l)	-	-	134	121	120	128	138	134	127	118	130
Phosphorus (mg/l)	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.06
Sulphate (mg/l)	-	-	169	158	146	133	149	180	179	170	177

The settlement lagoon was constructed to treat the discharge from the South Quarry in late 2009 and has been operational

Discharge Limits	Sampling Results (Year)
since 2010.	

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6.0 ASSESSMENT OF EFFECTS OF THE PROPOSED PROJECT

Based on the screening of potential hazards outlined above in Section 5.0, the continuation of quarrying operations at Huntstown is unlikely to have any significant stand-alone adverse effects on the integrity of any Natura 2000 site, or on any of the qualifying habitats or species for which these sites been classified/designated as being of European importance.

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7.0 AVOIDANCE AND MITIGATION

No specific avoidance and mitigation measures are currently employed during quarrying operations at Huntstown Quarry in relation to any Natura 2000 sites but the RWL will continue to undertake all quarrying operations and ancillary processing and manufacturing facilities in accordance with “best practice” and appropriate guidelines in a sensitive manner and with all due regard to environmental licences and consents. The current water management system, including existing mitigation measures as outlined above in this report, will be maintained and operated throughout the lifetime of quarrying operations at Huntstown Quarry.

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8.0 IN-COMBINATION ASSESSMENT

It is a requirement of The European Communities (Birds and Natural Habitats) Regulations 2011 that, when considering whether a plan or project will adversely affect the integrity of a Natura 2000 site that it must take into account in-combination effects with other current or reasonably foreseeable plans and projects.

There is no single agreed method for addressing the issue of in-combination effects, however, current practice and available guidance suggests a staged approach which takes into account the following:

- i. if it can be clearly demonstrated that the plan or project will not result in any effects at all that are relevant to the integrity of a Natura 2000 site then the plan or project should proceed without considering the in-combination test, further; or
- ii. if there are identified effects arising from the plan or project even if they are perceived as minor and not likely to have a significant effect on the integrity of a Natura 2000 site alone, then these effects must be considered 'in-combination' with the effects arising from other plans and projects.

From the assessment undertaken here, the continuation of quarrying and associated processing and manufacturing operations at Huntstown Quarry is considered not likely to have any significant effects on any Natura 2000 site or any qualifying features for which any particular site is of European interest as a stand-alone development. Therefore it is considered that there is not a requirement to undertake any further assessment in-combination with other plans and projects.

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9.0 SUMMARY AND CONCLUSIONS

This assessment has considered the potential effects associated with the continuation of quarrying operations and ancillary processing and manufacturing facilities at Huntstown Quarry.

The assessment has concluded that the continuation of quarrying operations is not likely to have an adverse effect on the integrity of any Natura 2000 site, or on any of the qualifying features for which these sites have been classified/designated, either as a stand-alone development or in-combination with other plans or projects within its zone of influence.

9.1 Natura Impact Statement –Summary

A summary of the NIS and findings of no significant effects in line with the methodology set out in the '*Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Methodological Guidance on the Provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*' is provided in Table 5.

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Table 5: Finding of No Significant Effects Report

Name of project or plan	Planning Application for the Continuance of use of the Existing Limestone Quarry and Ancillary Processing and Manufacturing Facilities at Huntstown Quarry, Finglas, Dublin
Name and location of Natura 2000 site(s)	<ul style="list-style-type: none"> • South Dublin Bay and River Tolka SPA (004024) 8.41km southeast at closest point; • Malahide Estuary SAC (00205) 9.99km northeast; • Malahide Estuary SPA (004025) 10.02km northeast; • North Dublin Bay SAC (00206) 10.86km southeast; • North Bull Island SPA and Ramsar Site (004006) 10.86km southeast; • South Dublin Bay SAC (000210) 11.05km southeast; • Rye Water Valley / Carton SAC (001398) 11.08 km southwest; • Baldoyle Bay SAC (000199) 12.01km east; • Baldoyle Bay SAC and Ramsar Site (004016) 12.06k east; • Rogerstown Estuary SAC (000208) 13.07km northeast; and • Rogerstown Estuary SPA (0004015) 13.68km northeast
Description of the project/plan	Continuation of quarrying operations and ancillary processing and manufacturing facilities including discharge of wastewater from the northern part of the quarry to the Ballystrahan Stream (River Ward catchment) and from the southern part of the quarry to Finglas Stream (Tolka River catchment).
Is the project or plan directly connected with or necessary to the management of the site?	No
Are there other projects or plans that together with the project or plan being assessed could affect the site?	No
The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 sites	No direct or indirect impacts predicted on the integrity of any Natura 2000 site or sites and on individual qualifying features for which each site was designated/classified as being of European importance.
Explain why the effects are not considered significant	<p>As a result of the project, there would be no direct loss of habitat at any Natura 2000 site or sites, no effects of disturbance (i.e. noise, vibration and visual disturbance, and no effects from the deposition of dust as a result of the continuation of quarrying operations at Huntstown due to the distance of the European sites from the quarry site.</p> <p>Water quality monitoring of discharged treated waters at Huntstown Quarry are considered to be of sufficient quality as not having a detrimental adverse impact on existing water quality in the receiving watercourses at the point of discharge or in downstream sections and the transitional waters of either the Malahide and Tolka Estuaries where the River Ward and Tolka River outflow respectively and where parts of these estuaries have been classified/designated as being of European importance and which form parts of a number of Natura 2000 sites</p>
List of agencies consulted: provide contact name and	None.

telephone or e-mail address

Response to consultation Not applicable

Data collected to carry out the assessment

Who carried out the assessment	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed?
Steve Judge Senior Ecologist MIEEM and employee of SLR	NPWS, EPA and Eastern River Basin District	Stage 1 – Screening Assessment Review of desk-top information relating to the Natura 2000 sites and qualifying features. The assessment is qualitative and is based on best practice and professional experience.	This document. Chapter 6 of Environmental Statement submitted as part of Planning Application (SLR).

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10.0 CLOSURE

This report has been prepared by SLR Consulting Ireland 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.

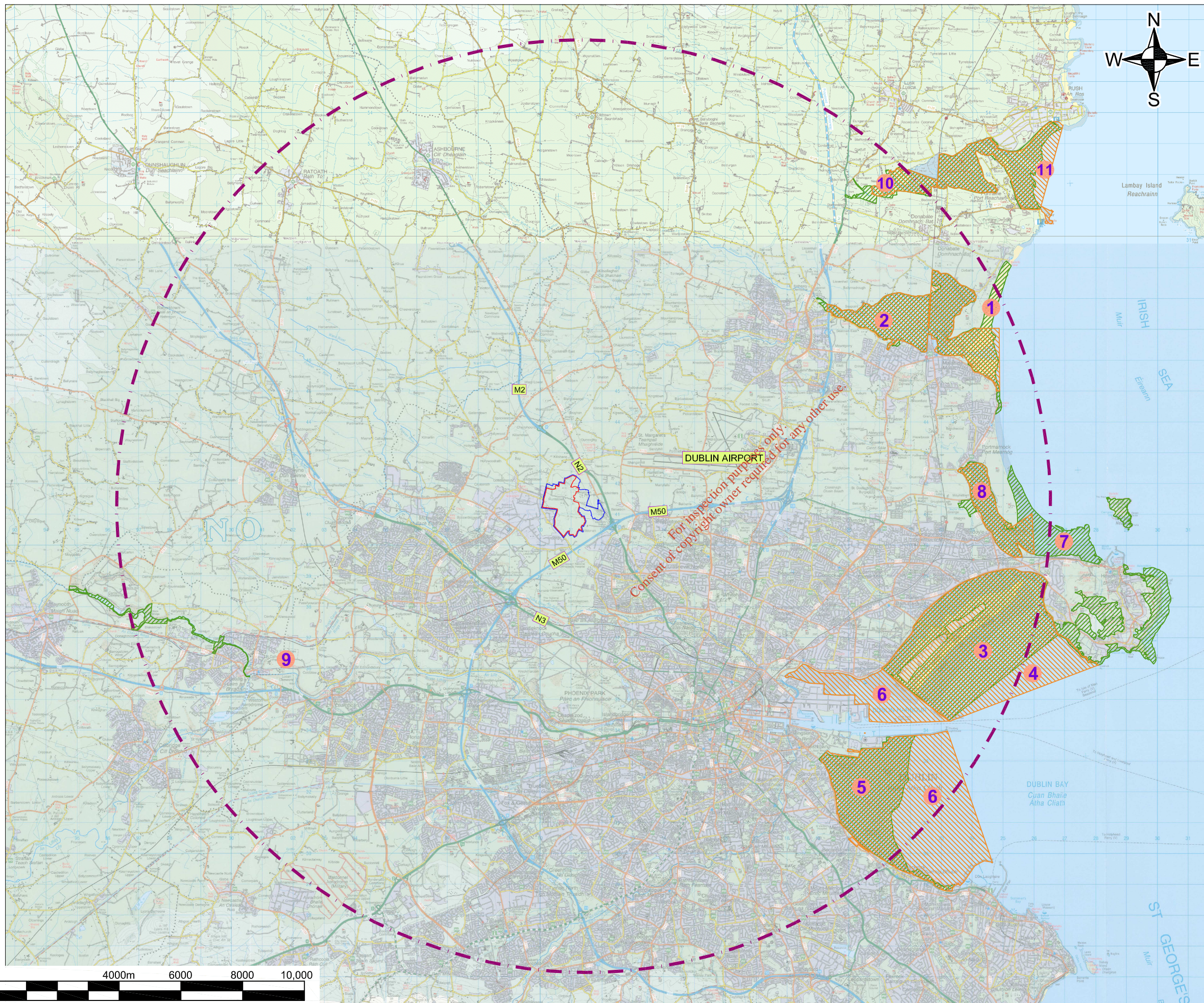
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Synopsis of Natura 2000 Sites

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NOTES

1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 50
2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000712 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

- ROADSTONE WOOD LTD. LANDHOLDING (c. 211 ha)
- PLANNING APPLICATION AREA (c. 167.5 ha)
- 15km RADIUS
- SPECIAL PROTECTION AREA (SPA)
- SPECIAL AREA OF CONSERVATION (SAC)

1. MALAHIDE ESTUARY SAC (000205)
2. MALAHIDE ESTUARY SPA (004025)
3. NORTH DUBLIN BAY SAC (000206)
4. NORTH BULL ISLAND SPA (004006)
5. SOUTH DUBLIN BAY SAC (000210)
6. SOUTH DUBLIN BAY & RIVER TOLKA SPA (004024)
7. BALDOYLE BAY SAC (000199)
8. BALDOYLE BAY SPA (004016)
9. RYE WATER VALLEY / CARTON SAC (001398)
10. ROGERSTOWN ESTUARY SAC (000208)
11. ROGERSTOWN ESTUARY SPA (004015)

R3	EW	SJ	06/12	
Revision	Drawn By	Chkd By	Date	Comments



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ADDITIONAL INFORMATION
 HUNTSTOWN QUARRY

CONTINUANCE OF USE
 FINGLAS, DUBLIN 11

**NATURA 2000 SITES WITHIN A 15km
 RADIUS OF THE SUBJECT SITE**

FIGURE 1

Scale 1:125,000 @ A3	Date NOVEMBER 2012
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