APPROPRIATE ASSESSMENT SCREENING REPORT

FOR

RESIDENTIAL DEVELOPMENT

AT

LANDS AT GORDON PARK, OLD NAAS ROAD, KINGSWOOD, DUBLIN 22

November 2021

ON BEHALF OF

GREENWALK DEVELOPMENT LTD.

Prepared by
Enviroguide Consulting

Dublin
3D Core C, Block 71, The Plaza, Park West, Dublin 12

Kerry
19 Henry Street
Kenmare, Co. Kerry

Wexford
M10 Wexford Enterprise Centre, Strandfield Business Park, Rosslare Road, Wexford

www.enviroguide.ie
info@enviroguide.ie
+353 1 565 4730

DOCUMENT CONTROL SHEET

Client	Greenwalk Development Ltd.
Project Title	Residential Development at Lands at Gordon Park, Old Naas Road, Kingswood, Dublin 22.
Document Title	Appropriate Assessment Screening Report

Rev.	Status	Author(s)	Reviewed by	Approved by	Issue Date
01	Internal Draft	Liam Gaffney *Senior Ecologist*	Siobhán Atkinson *Senior Ecologist*	-	19/11/2021
02	Client Issue	Liam Gaffney *Senior Ecologist*	Colin Lennon *Technical Director*	Colin Lennon *Technical Director*	19/11/2021
03	Final	Liam Gaffney *Senior Ecologist*	-	-	25/11/2021

REPORT LIMITATIONS

Synergy Environmental Ltd. t/a Enviroguide Consulting (hereafter referred to as "Enviroguide") has prepared this report for the sole use of Greenwalk Development Ltd, in accordance with the Agreement under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by Enviroguide.

The information contained in this Report is based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by Enviroguide has not been independently verified by Enviroguide, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by Enviroguide in providing its services are outlined in this Report.

The work described in this Report is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

All work carried out in preparing this report has used, and is based upon, Enviroguide's professional knowledge and understanding of the current relevant national legislation. Future changes in applicable legislation may cause the opinion, advice, recommendations or conclusions set-out in this report to become inappropriate or incorrect. However, in giving its opinions, advice, recommendations and conclusions, Enviroguide has considered pending changes to environmental legislation and regulations of which it is currently aware. Following delivery of this report, Enviroguide will have no obligation to advise the client of any such changes, or of their repercussions.

Enviroguide disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to Enviroguide's attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. Enviroguide specifically does not guarantee or warrant any estimate or projections contained in this Report.

Unless otherwise stated in this Report, the assessments made assume that the site and facilities will continue to be used for their current or stated proposed purpose without significant changes.

The content of this report represents the professional opinion of experienced environmental consultants. Enviroguide does not provide legal advice or an accounting interpretation of liabilities, contingent liabilities or provisions.

If the scope of work includes subsurface investigation such as boreholes, trial pits and laboratory testing of samples collected from the subsurface or other areas of the site, and environmental or engineering interpretation of such information, attention is drawn to the fact that special risks occur whenever engineering, environmental and related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing programme implemented in accordance with best practice and a professional standard of care may fail to detect certain conditions. Laboratory testing results are not independently verified by Enviroguide and have been assumed to be accurate. The environmental, ecological, geological, geotechnical, geochemical and hydrogeological conditions that Enviroguide interprets to exist between sampling points may differ from those that actually exist. Passage of time, natural occurrences and activities on and/or near the site may substantially alter encountered conditions.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Armstrong Fenton Associates acting on behalf of Greenwalk Development Limited, to prepare an Appropriate Assessment Screening Report in relation to a proposed residential development on a site at Gordon Park, Old Naas Road, Kingswood, Dublin 22. The purpose of this report is to provide information for the relevant competent authority to carry out a Stage 1 Appropriate Assessment Screening in respect of the Proposed Development.

1.2 Quality assurance and competence

Synergy Environmental Ltd., T/A Enviroguide Consulting, is a wholly Irish Owned multi-disciplinary consultancy specialising in the areas of Environment, Waste Management and Planning. All consultants have scientific or technical qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development.

Enviroguide Consulting as a company remains fully briefed in European and Irish environmental policy and legislation. Enviroguide's staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Enviroguide Senior Ecologist Liam Gaffney carried out the field surveys and report writing for this assessment.

Liam Gaffney has a B.Sc. in Zoology (Hons) and a M.Sc. (Hons) in Wildlife Conservation and Management, from University College Dublin, and a wealth of experience in desktop research, literature scoping-review, and report writing, as well as practical field experience (Habitat surveys, Invasive species surveys, Wintering bird surveys, large mammals, fresh water macro-invertebrates etc.). Liam has extensive experience in compiling Biodiversity Chapters of EIARs, EcIAs, AA screening and NIS reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments. Liam is also a Qualifying member of CIEEM, the Chartered Institute of Ecology and Environmental Management.

1.3 Relevant Legislation

1.3.1 Legislative Background

Member States are required to designate Special Areas of Conservation (SACs) and Special Protected Areas (SPAs) under the EU Habitats and Birds Directives, respectively. SACs and SPAs are collectively known as Natura 2000 or 'European Sites'. An 'Appropriate Assessment' (AA) is a required assessment to determine the likelihood of significant effects, based on best scientific knowledge, of any plans or projects on European Sites. A screening for AA

determines whether a plan or project, either alone or in combination with other plans and projects, is likely to have significant effects on a European Site, in view of its conservation objectives.

This AA Screening has been undertaken to determine the potential for significant effects on nearby Sites with European conservation designations (i.e., Natura 2000 Sites). The purpose of this assessment is to determine, the appropriateness, or otherwise, of the Proposed Development in the context of the conservation objectives of such sites.

1.3.2 Legislative Context

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of SACs and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of SPAs. It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community.

An Appropriate Assessment is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a European Site, and paragraphs 3 and 4 state that:

6(3) Any plan or project not directly connected with or necessary to the management of the site ***but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site****, in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.* [emphasis added]

6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

The current assessment was conducted within this legislative framework and also, the published DEHLG (2009) guidelines. As outlined in these, it is the responsibility of the proponent of the project to provide a comprehensive and objective Screening for Appropriate Assessment, which can then be used by the competent authority in order to conduct the Appropriate Assessment (DEHLG, 2009).

1.3.3 Stages of AA

An Appropriate Assessment Screening Report (the "**Screening Report**") has been prepared by Enviroguide Consulting which considers whether the Proposed Development is likely to

have a significant effect on any European Site and whether a Stage 2 Appropriate Assessment is required.

The AA process is a four-stage process, with issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

Figure 1. The four stages of the Appropriate Assessment Process (DEHLG, 2010).

The four stages of an AA can be summarised as follows:

- Stage 1: *Screening*. The first stage of the AA process is to determine whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European Site in view of its conservation objectives.
- Stage 2: *Natura Impact Statement (NIS)*. The second stage of the AA process assesses the impact of the proposal (either alone or in combination with other projects or plans) on the integrity of the European Site, with respect to the conservation objectives of the site and its ecological structure and function. A Natura Impact Statement containing a professional, scientific examination of the proposal is required and includes any mitigation measure to avoid, reduce or offset negative effects.
- Stage 3: *Assessment of alternative solutions*. If the outcome of Stage 2 is negative, i.e., adverse effects on the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.
- Stage 4: *Assessment where no alternative solutions exist and where adverse impacts remain*. The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European Site, where no less damaging solution exists.

The purpose of Stage 1, the Screening Stage, is to determine the necessity or otherwise for a NIS. Screening for AA examines the likely effects of a project or plan alone, and in combination with other projects or plans, upon a European Site, and considers whether it can be objectively concluded that these effects will not be significant.

If it is determined during the screening stage that the proposal may have a significant effect on a European Site, then a NIS will need to be prepared. The Appropriate Assessment Screening is detailed in the following sections.

2 METHODOLOGY

2.1 Screening Steps

This Screening for AA, or Stage 1 of AA, has been undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001) and the European Commission Guidance 'Managing Natura 2000 sites' (EC, 2018). Screening for AA involves the following:

- Establish whether the project or plan is necessary for the management of a European Site.
- Description of the project or plan.
- Identification of all European Sites potentially affected.
- Identification and description of individual and cumulative effects likely to result from the project or plan.
- Assessment of the significance of the effects identified on European Sites.
- Exclusion of European Sites where it can be objectively concluded that there will be no significant effects.

This Stage 1 Screening examines whether likely effects upon a European Site will be significant and determines whether the AA process for the Proposed Development at Lands at Gordon Park, Old Naas Road, Kingswood, Dublin 22, alone, and in combination with other developments in the area; requires a Stage 2 Assessment.

2.2 Desk Study

A desk study was carried out to collate available information on the site's natural environment. This study comprised a review of a wide range of available publications, datasets and resources, including the following sources:

- National Parks and Wildlife Service (NPWS) datasets.
- Geological Survey Ireland (GSI) online datasets and mapping.
- Environmental Protection Agency (EPA) mapping and datasets.
- National Biodiversity Data Centre (NBDC) online mapping and species records.
- OSI aerial imagery and Discovery Series mapping.
- Satellite imagery from various sources and dates (Google, Digital Globe, Bing).
- The Status of EU Protected Habitats in Ireland (NPWS).

For a complete list of the specific documents consulted as part of this assessment, see *Section 5 References.*

2.3 Field Surveys

2.3.1 Ecological surveys

Field surveys were carried out by Enviroguide Consulting on the 13th of July 2021. The Site was surveyed for any potentially important ecological receptors to inform the completion of this AA Screening Report.

2.4 Assessment of Impacts

Once the potential impacts that may arise from the proposal are identified, the significance of these is assessed using the key indicators listed below. This assessment framework is taken from the best practice guidelines issued by the European Commission, "*Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance*" (EC, 2001):

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.
- Changes in population density.
- Changes in water quality and resource.

The following terms are defined when quantifying duration (EPA, 2017):

Table 1. Definition of Durations (EPA, 2017).

Description of Duration	Corresponding Time Frame
Momentary Effects	Effects lasting from seconds to minutes
Brief Effects	Effects lasting less than a day
Temporary Effects	Effects lasting less than a year
Short-term Effects	Effects lasting one to seven years.
Medium-term Effects	Effects lasting seven to fifteen years.
Long-term Effects	Effects lasting fifteen to sixty years
Permanent Effects	Effects lasting over sixty years
Reversible Effects	Effects that can be undone, for example through remediation or restoration
Frequency of Effects	Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)

The criteria for significance levels of predicted likely impacts are given below in Table 2.

Table 2. Impact Significance Criteria (EPA, 2017).

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment

3 STAGE 1 SCREENING

3.1 Management of European Sites

The construction of the Proposed Development at Gordon Park, Old Naas Road, Kingswood, Dublin 22 (the Project) is not directly connected with or necessary to the management of any European Sites. There are no European Sites located either within or immediately adjacent to the Site of the Proposed Development.

3.2 Description of Project

3.2.1 Brief Project Description

The Proposed Development consists of 77 no. dwellings, comprised of 63 no. 2 storey houses, and 14 no. apartments & duplex units accommodated in 1 no. 3 storey building. The proposed houses are comprised of 8 no. 2 bed houses & 55 no. 3 bed houses. The proposed apartments & duplex units are comprised of 7 no. 1 bed apartments at ground floor & 7 no. 3 bed duplex units overhead. The Proposed Development also provides for all associated site development & infrastructural works, car & bicycle parking, open spaces & landscaping, bin & bicycle storage. Access to the development will by via a new vehicular entrance at the south-west corner of the site, off the Old Naas Road. Permission is also sought to demolish the existing building on site, approx. 455m².

3.2.2 Operational Phase

The Operational Phase will comprise of residential use.

3.2.2.1 Operational Surface Water Drainage

An Engineering Services Report has been prepared by TJ O'Connor Consulting Engineers (TJOC) in relation to the Proposed Development. This report notes that there is currently no public surface water drainage infrastructure in the Old Naas Road in proximity to the Site, and

that ground water discharge of surface waters is not fully feasible for this development due to the underlying clay soils present across the Site, particularly in the west.

As such, the surface water management system has been designed to allow for these underlying conditions and a hybrid solution is proposed. This will consist of infiltration to the ground where possible and the collection of surface water via a piped network eventually discharging into the existing watercourse located along the eastern boundary of the Site.

The overall approach to surface water management at the Site will thus involve the following:

- The driveways of houses will be provided with permeable paving. Rainwater from the front roofs of the houses will discharge to the subbase of the permeable paved driveways where it will be stored and released to ground via infiltration or to the surface water network via a fin drain within the subbase. The base of the driveway build-up will be provided with a geotextile membrane to allow surface water to infiltrate to ground where possible.
- Rainwater from the rear roofs of the houses will be collected in a filter drain in the rear gardens of the house. These filter drains will allow infiltration to the ground but will also be connected to the surface water network to allow larger rainfall events to be managed therein.
- The roads and footpaths at the Site will discharge to a surface water piped network within the roads. The overall attenuation for the Site will be provided in two main areas at the site, namely at the northwest of the Site and at the east of the Site, within a green space area adjacent to the proposed surface water outfall location. There is also a small Bioswale area to the southwest corner of the site that collects surface water from the rear roofs of House No's 16-23.

Surface water at the Site will be intercepted and treated by a suite of SUDS measures incorporated into the project design prior to discharge from the Site. These will include:

- Permeable paving under car parking areas and driveways.
- Filter drains throughout the Site to allow infiltration to ground where possible.
- Two Stormtech underground attenuation systems.
- A Klargester petrol interceptor NSBE025 (by-pass separator) located prior to outflow to the receiving stream.

With regard SUDS, it is a policy of South Dublin County Council as laid out in the County Development Plan 2016- 2022 (Policy IE2, Objectives 3, 4 & 5 in particular) to require that all new developments incorporate these sustainable drainage systems in their design. The Plan states in Section 11.6.1 (iii) (pg.224):

"In general, all new developments will be required to incorporate Sustainable Urban Drainage Systems (SUDS). SUDS include devices such as swales, permeable pavements, filter drains, storage ponds, constructed wetlands, soakways and green roofs."

It is noted that these design features are a requirement in all new development, as per the above policy; to contribute to the improvement of water quality in receiving waterbodies, the reduction of flooding downstream and the easing of pressures on existing drainage networks.

They are in **no way** included as a mode of mitigating potential effects on European Sites as a result of the Proposed Development. Even in the absence of these SUDS measures, it is deemed that there would be no potential for significant effects to occur at downstream European Sites as a result of the Proposed Development.

3.2.2.2 Operational Foul Water

Foul waters from the Proposed Development will be discharged eventually to Ringsend WWTP for treatment via the existing foul water drainage network along the Old Naas Road. It is proposed to connect the development to the existing 600 diameter foul sewer at the southwest corner of the Site. The applicant has received a Confirmation of Feasibility from Irish Water for the Proposed Development.

3.3 Existing Environment

The Site of the Proposed Development comprises the current Clondalkin Rugby Football Club ground, with ground cover largely made up of playing pitches and hardstanding associated with the clubhouse and carpark. The Site is located just off the Old Naas Road and is bound to the east and north by a tributary of the Kingswood Stream and the Roadstone Group Sports Club respectively; to the west by residential and commercial lands, and to the south by further residential lands.

3.3.1 *Geology*

The Site is underlain by the Lucan bedrock formation (CDLUCN) and is described as *'Dark limestone & shale (`calp)'*. The groundwater rock units underlying the area are classified as *Dinantian Upper Impure Limestones* (GSI, 2021). The sub-soil at the Site of the Proposed Development is classified as *Till derived from Limestones* (GSI, 2021).

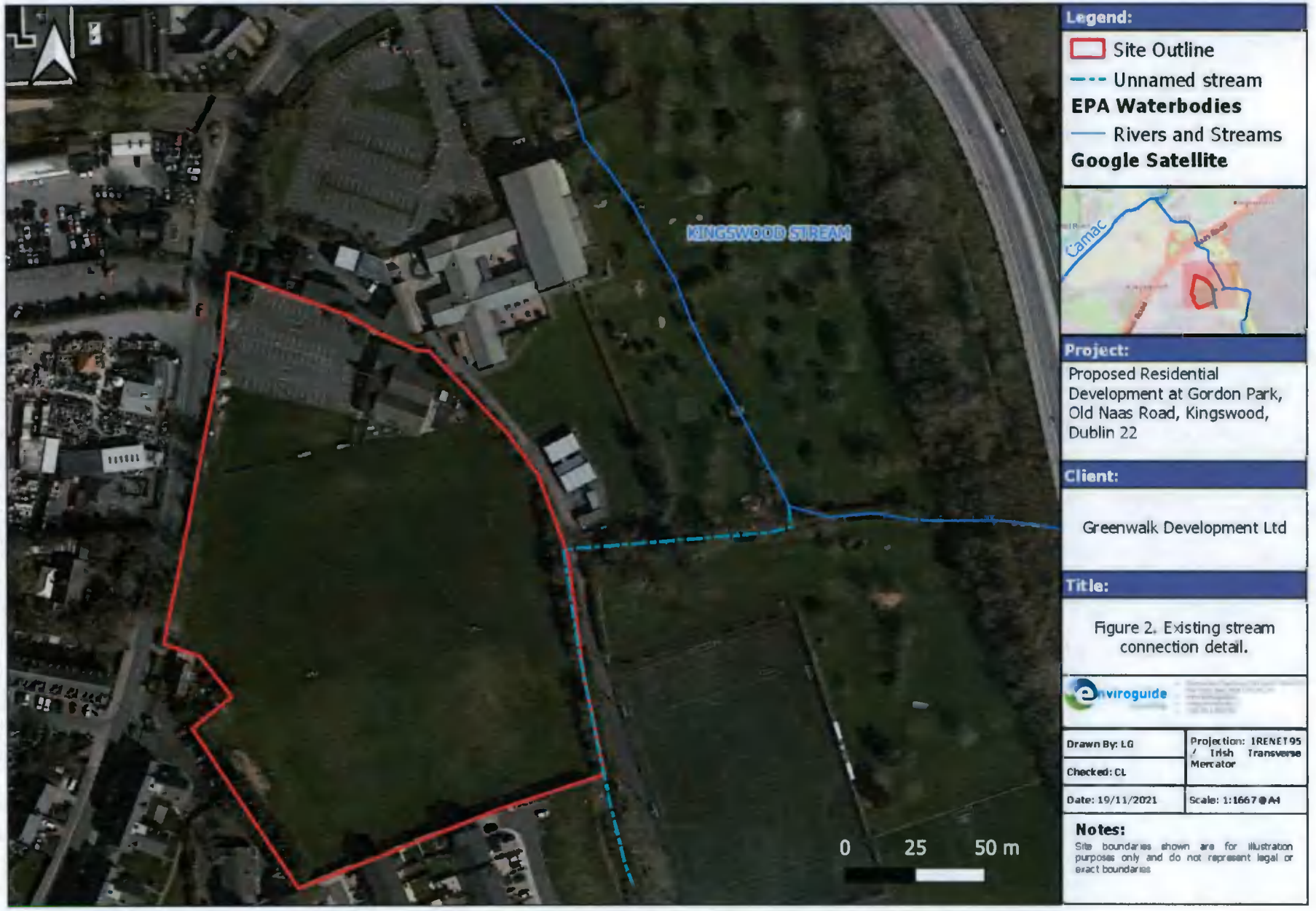
3.3.2 Hydrogeology

Kingswood and the surrounding area are located within the Dublin groundwater body, which has an overall Water Framework (WFD) status of *Good* according to the EPA (EPA, 2021). The Site of the Proposed Development is located on a *Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones,* with groundwater vulnerability in the area listed as *High* across the Site (EPA, 2021).

3.3.3 Hydrology

The Site of the Proposed Development is located within the Liffey and Dublin Bay river catchment, the River Liffey sub catchment (Liffey_SC_090) and the CAMAC_030 sub basin (EPA, 2021).

An unnamed tributary of the Kingswood Stream (EPA Code: 09K07) runs along part of the Site's eastern boundary. The Kingswood Stream flows for approx. 850m due northwest before it joins the Camac River (EPA Code: 09C02). The Baldonnel_upper watercourse (EPA Code: 09B91) also flows ca. 300m to the west of the Site, flowing north until it also joins the Camac. Both of these named tributaries rise in the uplands to the south of the Site of the Proposed Development. The Camac flows northeast until it outflows into the River Liffey at Heuston Station ca. 10km from the Site of the Proposed Development as the crow flies. The Liffey flows a further ca. 9km from this point before outflowing into Dublin Bay.


KINGSWOOD STREAM
0
25
50 m
Legend:
Site Outline
Unnamed stream
EPA Waterbodies
Rivers and Streams
Google Satellite
Camac
Project:
Proposed Residential Development at Gordon Park, Old Naas Road, Kingswood, Dublin 22
Client:
Greenwalk Development Ltd
Title:
Figure 2. Existing stream connection detail.
Drawn By: LG
Checked: CL
Projection: IRENET95 / Irish Transverse Mercator
Date: 19/11/2021
Scale: 1:1667 @ A4
Notes:
Site boundaries shown are for illustration purposes only and do not represent legal or exact boundaries

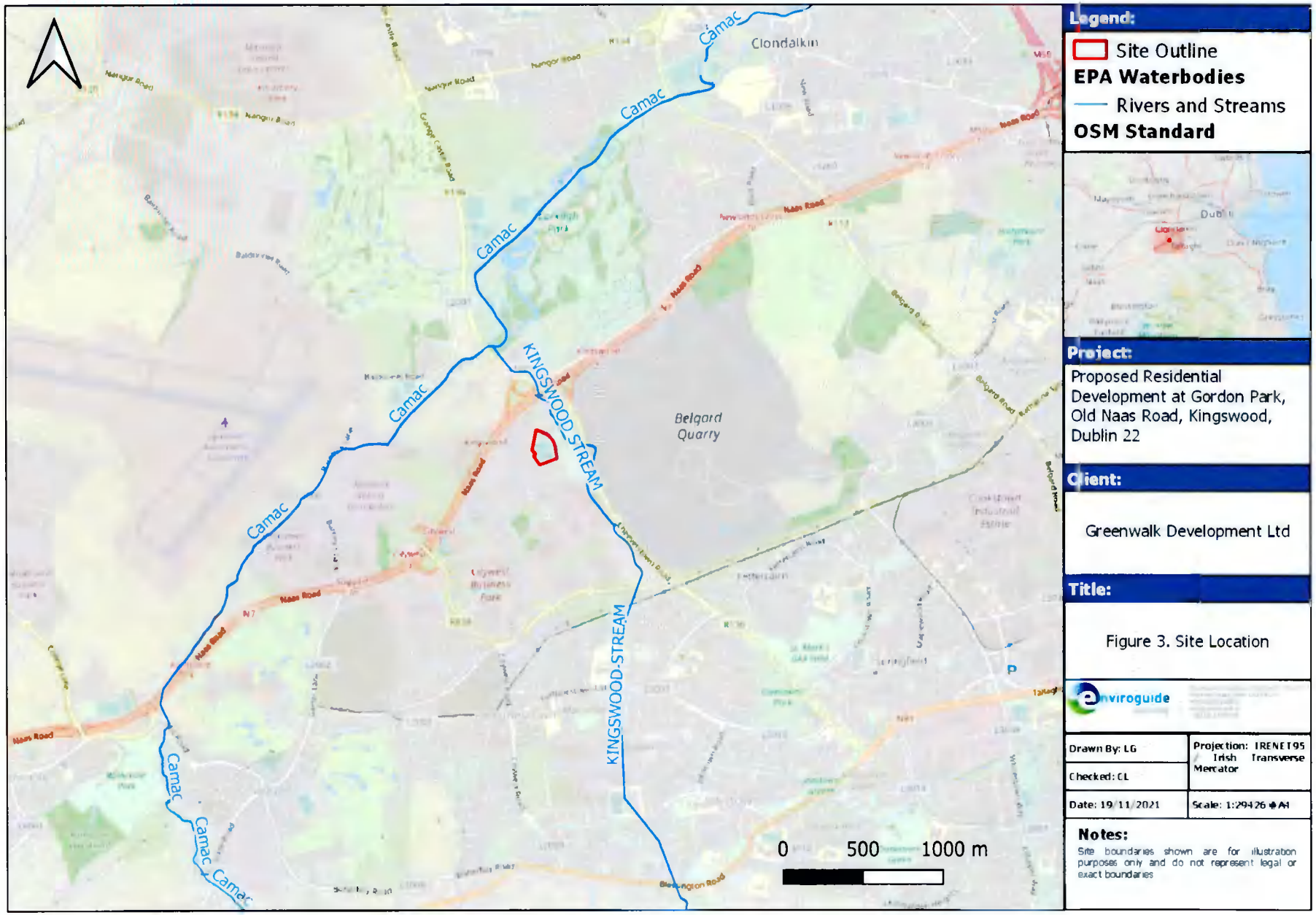

Clondalkin
Camac
KINGSWOOD STREAM
Belgard Quarry
Naas Road
N7
0
500
1000 m
Legend:
Site Outline
EPA Waterbodies
Rivers and Streams
OSM Standard
Project:
Proposed Residential Development at Gordon Park, Old Naas Road, Kingswood, Dublin 22
Client:
Greenwalk Development Ltd
Title:
Figure 3. Site Location
Drawn By: LG
Checked: CL
Date: 19/11/2021
Projection: IRENET95 / Irish Transverse Mercator
Scale: 1:29426 @ A4
Notes:
Site boundaries shown are for illustration purposes only and do not represent legal or exact boundaries

Figure 4. Indicative Proposed Development Layout, extracted from Cunnane Stratton Reynolds Landscape Masterplan (drawing no: 21578-2-101, dated October 2021).

3.4 Identification of Relevant European Sites

In order to identify the European Sites that potentially lie within the Zone of Influence (ZOI) of the Proposed Development, a Source-Path-Receptor method (S-P-R) was adopted, as described in '*OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management*' (OPR, 2021), a practice note produced by the Office of the Planning Regulator, Dublin. This note was published to provide guidance on screening for appropriate assessment (AA) during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also readily applied in the preparation of Appropriate Assessment Screening Reports such as this.

The guidance document published by the Department of Housing, Planning and Local Government (then DEHLG) '*Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities*' (2009) recommends a distance of 15km as the precautionary ZOI for a plan or project being assessed for likely significant effects on European Sites, stating however that this should be evaluated on a case-by-case basis, with sites outside 15km included in the assessment depending on the likely impacts of the project and the sensitivities of the ecological receptors, bearing in mind the precautionary principle (e.g., where a hydrological pathway is present it may be necessary to assess sites outside the 15km limit). As such, the 15km ZOI is used in this report as an initial starting point for collating European sites for AA screening.

The Source-Path-Receptor method was then applied to screen out those sites where no impact pathway exists linking them to the Site of Proposed Development (See Table 4). Where a potential impact pathway exists, European Sites will be assessed further and a recommendation on the need for full Appropriate Assessment will be made if required.

The result of this preliminary screening concluded that there is a total of six SACs and four SPAs located within the initial ZOI of the Proposed Development Site. In the case of this Proposed Development, two European Sites located outside of this initial 15km buffer were deemed to fall within the initial ZOI. As described in the following sections, the only impact pathway identified is via the local receiving surface water network, which eventually flows via the Rivers Camac and Liffey into Dublin Bay. Sites within the inner Dublin Bay are therefore included due to this hydrological connection. However, any sites located outside of the 15km limit in this case would be located in the outer bay, or further along the coast, and separated by a significant marine buffer, thus making any hydrological pathway to the Proposed Development theoretical in nature.

The site name, corresponding code and qualifying interests are detailed in Table 3 below. The distances to each site listed below are taken from the nearest possible point of the Proposed Development Site boundary to the nearest possible point of each European Site.

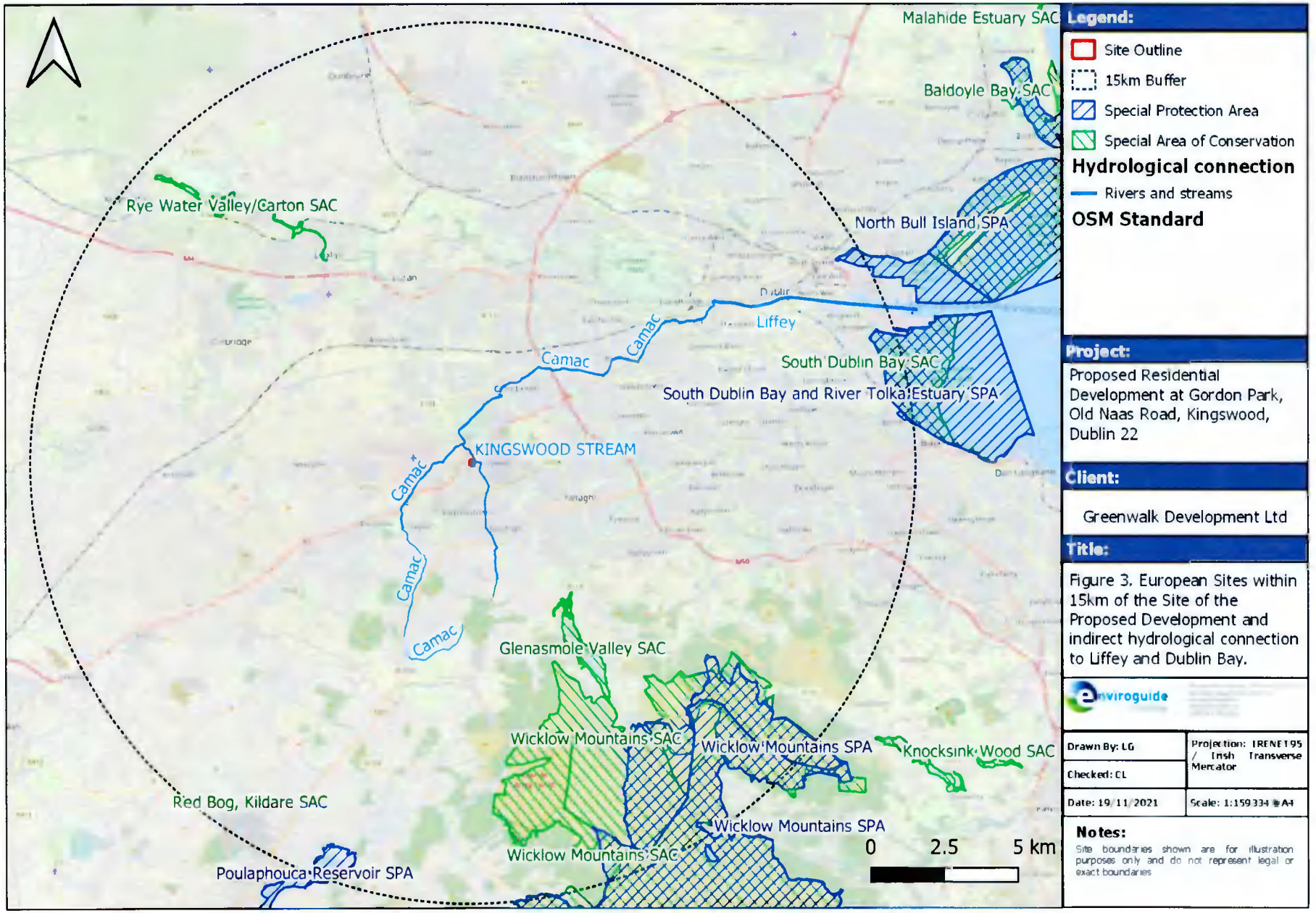
Table 3. European Sites within a 15km radius of the Site of the Proposed Development.

Site Code	Site Name	Qualifying Interests	Distance to Site
Special Areas of Conservation (SAC)			

Site Code	Site Name	Qualifying Interests	Distance to Site
000397	Red Bog, Kildare SAC	- [7140] Transition Mires	13.5km South-west
002122	Wicklow Mountains SAC	- [3110] Oligotrophic Waters containing very few minerals. - [3130] Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* - [3160] Dystrophic Lakes - [4010] Wet Heath - [4030] Dry Heath - [4060] Alpine and Subalpine Heaths - [6130] Calaminarian Grassland - [6230] Species-rich *Nardus* Grassland* - [7130] Blanket Bogs (Active)* - [8110] Siliceous Scree - [8210] Calcareous Rocky Slopes - [8220] Siliceous Rocky Slopes - [91A0] Old Oak Woodlands - [1355] Otter (*Lutra lutra*)	7.3km South
001209	Glenasmole Valley SAC	- [6210] Orchid-rich Calcareous Grassland* - [6410] *Molinia* Meadows - [7220] Petrifying Springs*	5.5km South-east
000210	South Dublin Bay SAC	- [1140] Tidal Mudflats and Sandflats - [1210] Annual vegetation of drift lines - [1310] Salicornia and other annuals colonising mud and sand. - [2110] Embryonic shifting dunes	14.2km East
001398	Rye Water Valley/ Carton SAC	- [7220] Petrifying Springs* - [1014] Narrow-mouthed Whorl Snail (*Vertigo angustior*) - [1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)	8.4km North-west
000206	North Dublin Bay SAC	- [1140] Tidal Mudflats and Sandflats - [1210] Annual Vegetation of Drift Lines - [1310] Salicornia Mud - [1330] Atlantic Salt Meadows - [1410] Mediterranean Salt Meadows - [2110] Embryonic Shifting Dunes - [2120] Marram Dunes (White Dunes) - [2130] Fixed Dunes (Grey Dunes) * - [2190] Humid Dune Slacks - [1395] Petalwort (*Petalophyllum ralfsii*)	17km North-east
Special Protection Areas (SPA)			

Site Code	Site Name	Qualifying Interests	Distance to Site
004063	Poulaphouca Reservoir SPA	- [A043] Greylag Goose (*Anser anser*) - [A183] Lesser Black-backed Gull (*Larus fuscus*)	13.8km South-west
004040	Wicklow Mountains SPA	- [A098] Merlin (*Falco columbarius*) [breeding] - [A103] Peregrine (*Falco peregrinus*) [breeding]	10.3km South-east
004024	South Dublin Bay and River Tolka Estuary SPA	- [A046] Light-bellied Brent Goose (*Branta bernicla hrota*) [wintering] - [A130] Oystercatcher (*Haematopus ostralegus*) [wintering] - [A137] Ringed Plover (*Charadrius hiaticula*) [wintering] - [A141] Grey Plover (*Pluvialis squatarola*) [wintering] - [A143] Knot (*Calidris canutus*) [wintering] - [A144] Sanderling (*Calidris alba*) [wintering] - [A149] Dunlin (*Calidris alpina*) [wintering] - [A157] Bar-tailed Godwit (*Limosa lapponica*) [wintering] - [A162] Redshank (*Tringa totanus*) [wintering] - [A179] Black-headed Gull (*Chroicocephalus ridibundus*) [wintering] - [A192] Roseate Tern (*Sterna dougallii*) [passage] - [A193] Common Tern (*Sterna hirundo*) [breeding] [passage] - [A194] Arctic Tern (*Sterna paradisaea*) [breeding [passage] - [A999] Wetland and Waterbirds	14.2km East
004006	North Bull Island SPA	- [A046] Light-bellied Brent Goose (*Branta bernicla hrota*) [wintering] - [A048] Shelduck (*Tadorna tadorna*) [wintering] - [A052] Teal (*Anas crecca*) [wintering] - [A054] Pintail (*Anas acuta*) [wintering] - [A056] Shoveler (*Anas clypeata*) [wintering] - [A130] Oystercatcher (*Haematopus ostralegus*) [wintering] - [A140] Golden Plover (*Pluvialis apricaria*) [wintering] - [A141] Grey Plover (*Pluvialis squatarola*) [wintering] - [A143] Knot (Calidris canutus) [wintering] - [A144] Sanderling (*Calidris alba*) [wintering] - [A149] Dunlin (*Calidris alpina*) [wintering] - [A156] Black-tailed Godwit (*Limosa limosa*) [wintering] - [A157] Bar-tailed Godwit (*Limosa lapponica*) [wintering] - [A160] Curlew (*Numenius arquata*) [wintering] - [A162] Redshank (*Tringa totanus*) [wintering] - [A169] Turnstone (*Arenaria interpres*) [wintering] - [A179] Black-headed Gull (*Chroicocephalus ridibundus*) [wintering]	17km North-east

Site Code	Site Name	Qualifying Interests	Distance to Site
		- [A999] Wetland and Waterbirds	


Malahide Estuary SAC
Baldoyle Bay SAC
Rye Water Valley/Carton SAC
North Bull Island SPA
Liffey
Camac
South Dublin Bay SAC
South Dublin Bay and River Tolka Estuary SPA
KINGSWOOD STREAM
Glenasmole Valley SAC
Wicklow Mountains SAC
Wicklow Mountains SPA
Knocksink Wood SAC
Red Bog, Kildare SAC
Poulaphouca Reservoir SPA
0 2.5 5 km
Legend:
Site Outline
15km Buffer
Special Protection Area
Special Area of Conservation
Hydrological connection
Rivers and streams
OSM Standard
Project:
Proposed Residential Development at Gordon Park, Old Naas Road, Kingswood, Dublin 22
Client:
Greenwalk Development Ltd
Title:
Figure 3. European Sites within 15km of the Site of the Proposed Development and indirect hydrological connection to Liffey and Dublin Bay.
Drawn By: LG
Projection: IRENET95 / Irish Transverse Mercator
Checked: CL
Date: 19/11/2021
Scale: 1:159334 @ A4
Notes:
Site boundaries shown are for illustration purposes only and do not represent legal or exact boundaries

3.4.1 Source-Pathway-Receptor Assessment

Table 4 below details the screening out of European Sites within the 15km precautionary ZOI (and further afield) that do not maintain an impact pathway with the Proposed Development. Those European Sites where potential impact pathways have been identified are assessed in further detail in this report.

Table 4. Assessment of nearby European Sites for potential impact pathways using the Source-Pathway-Receptor method.

European Site	Distance from Proposed Development	Presence of Impact Pathway	Assessed further in Screening
Special Areas of Conservation (SAC)			
000397 Red Bog, Kildare SAC	13.5km South-west	**No** There are no impact pathways present between the Proposed Development and the habitats listed for this SAC. This SAC is located a considerable distance to the south-west of the Proposed Development. No hydrological connectivity exists.	No
001398 Rye Water Valley/ Carton SAC	8.4km North-west	**No** There are no impact pathways present between the Proposed Development and the habitats/species listed for this SAC. This SAC is located a considerable distance to the North-west of the Proposed Development. No hydrological connectivity exists.	No
002122 Wicklow Mountains SAC	7.3km South	**No** There are no impact pathways present between the Proposed Development and the habitats/species listed for this SAC. No hydrological connectivity exists. This SAC is located in the mountains a considerable distance to the south of the Proposed Development.	No
001209 Glenasmole Valley SAC	5.5km South-east	**No** There are no impact pathways present between the Proposed Development and the habitats listed for this SAC. No hydrological connectivity exists.	No

European Site	Distance from Proposed Development	Presence of Impact Pathway	Assessed further in Screening
		This SAC is located in the mountains a considerable distance to the south of the Proposed Development.	
000210 South Dublin Bay SAC	14.2km East	**Yes** It is proposed to discharge surface water from the Site to the watercourse present along the Site's eastern boundary once attenuated and treated. A hydrological connection therefore exists between the Site and the SAC via the Kingswood Stream, Rivers Camac and Liffey, which eventually outflow into Dublin Bay ca.22km downstream of the Site.	**Yes**
000206 North Dublin Bay SAC	17km North-east	**Yes** It is proposed to discharge surface water from the Site to the watercourse present along the Site's eastern boundary once attenuated and treated. A hydrological connection therefore exists between the Site and the SAC via the Kingswood Stream, Rivers Camac and Liffey, which eventually outflow into Dublin Bay ca.22km downstream of the Site.	**Yes**
Special Protection Areas (SPA)			
004063 Poulaphouca Reservoir SPA	13.8km South-west	**No** There are no impact pathways present linking the Proposed Development and populations of bird species listed for this SPA. This SPA is located in the mountains a considerable distance to the south of the Proposed Development.	No
004040 Wicklow Mountains SPA	10.3km South-east	**No**	No

European Site	Distance from Proposed Development	Presence of Impact Pathway	Assessed further in Screening
		There are no impact pathways present linking the Proposed Development and populations of bird species listed for this SPA. This SPA is located in the mountains a considerable distance to the south of the Proposed Development.	
004024 South Dublin Bay and River Tolka Estuary SPA	14.2km North-east	**Yes** It is proposed to discharge surface water from the Site to the watercourse present along the Site's eastern boundary once attenuated and treated. A hydrological connection therefore exists between the Site and the SPA via the Kingswood Stream, Rivers Camac and Liffey, which eventually outflow into Dublin Bay ca.22km downstream of the Site.	**Yes**
004006 North Bull Island SPA	17km North-east	**Yes** It is proposed to discharge surface water from the Site to the watercourse present along the Site's eastern boundary once attenuated and treated. A hydrological connection therefore exists between the Site and the SPA via the Kingswood Stream, Rivers Camac and Liffey, which eventually outflow into Dublin Bay ca.22km downstream of the Site.	**Yes**

3.4.2 Results of Source-Pathway-Receptor Assessment

Four European Sites have been identified as having source-pathway-receptor connectivity with the Proposed Development.

These sites located in Dublin Bay maintain a hydrological link with the Site via proposed surface water discharges to the tributary of the Kingswood Stream that runs along part of the Site's eastern boundary. The Kingswood Stream flows for approx. 850m due northwest before it joins the Camac River, which flows northeast until it outflows into the River Liffey at Heuston Station ca. 10km from the Site of the Proposed Development as the crow flies. The Liffey flows a further ca. 9km from this point before outflowing into Dublin Bay (approx. 22km downstream of the Site of the Proposed Development).

The following European Sites are therefore considered to fall within the precautionary ZOI of the Proposed Development:

- South Dublin Bay SAC (000210)
- North Dublin Bay SAC (000206)
- South Dublin Bay and River Tolka Estuary SPA (004024)
- North Bull Island SPA (004006)

All other European Sites screened out in table 4 above, due to a lack of any source-pathway-receptor connection with the Proposed Development, do not have the potential to be significantly affected by said development, and thus, do not require further consideration in this report.

3.5 Identification and Assessment of Potential Impacts

Information sources available on the European Sites identified to lie within the precautionary zone of influence (ZOI) of the Proposed Development were reviewed and assessed, to establish whether the construction and operational phases of the Proposed Development have the potential to have likely significant effects on any of the qualifying interests and/or conservation objectives of said sites. The following elements of the Proposed Development were assessed for their potential to cause likely significant effects:

Construction Phase (estimated duration: 24 months)

- Uncontrolled releases of silt, sediments and/or other pollutants to air due to earthworks.
- Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies.
- Increased noise, dust and/or vibrations as a result of construction activity.
- Increased dust and air emissions from construction traffic.
- Increased lighting in the vicinity as a result of construction activity.

Operational Phase (estimated duration: indefinite)

- Proposed treated surface water discharge from the Proposed Development to receiving waterbodies.
- Foul water from the Proposed Development leading to increased loading on receiving WWTP.
- Flooding events at the Site of the Proposed Development.
- Increased lighting in the vicinity emitted from the Proposed Development.
- Increased human presence in the vicinity as a result of the Proposed Development.

The potential for likely significant effects resulting from the Proposed Development was determined based on a range of key indicators (as per EC, 2001), including:

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.
- Changes in population density.

- Changes in water quality and resource.

An assessment of the features of the Proposed Development that have the potential to directly or indirectly result in likely significant effects on the European Sites deemed to lie within its precautionary ZOI are detailed in Table 5.

Table 5. Identification and assessment of likely significant effects on European Sites within the precautionary ZOI of the Proposed Development.

European Site	Potential for Likely Significant Effects
Special Areas of Conservation (SAC)	
South Dublin Bay SAC	**No possibility of likely significant effects on these SACs due to:** **The nature of the hydrological connection with the Site of the Proposed Development.** - The Proposed Development is linked tenuously to these Dublin Bay SACs via a tributary of the Kingswood Stream which runs alongside the Sites eastern boundary. It is proposed to discharge operational surface waters from the Site to the stream once attenuated and treated on-site. - Due to the potential for dilution and mixing within the receiving surface water network i.e., Kingswood Stream, River Camac and River Liffey, and subsequently within Dublin Bay itself, it is not deemed that any inadvertent construction Phase, or Operation Phase related surface water run-off would have the potential to lead to significant effects in these SACs relating to the Key indicator **'Changes in Water Quality and/or Resource'**. - In addition, and although not relied upon whatsoever in this determination of 'no significant impact', it is noted that a suite of SUDS measures have been incorporated into the proposed design as per the requirements of the Greater Dublin Regional Code of Practice for Drainage Works and the policies of the South Dublin County Development Plan 201-2022. These measures have been included to contribute to both the improvement of water quality in receiving waterbodies and the easing of pressures on existing drainage networks; and will further reduce any risk of local surface water related pollution as a result of the operation of the Proposed Development.
North Dublin Bay SAC	
Special Protection Areas (SPA)	
South Dublin Bay and River Tolka Estuary SPA	**No possibility of likely significant effects on these SPAs due to:** **The nature of the hydrological connection with the Site of the Proposed Development.** - The Proposed Development is linked tenuously to these Dublin Bay SPAs via a tributary of the Kingswood Stream which runs alongside the Sites eastern boundary. It is proposed to discharge operational surface waters from the Site to the stream once attenuated and treated on-site. - Due to the potential for dilution and mixing within the receiving surface water network i.e., Kingswood Stream, River Camac and River Liffey, and subsequently within Dublin Bay

North Bull Island SPA	itself, it is not deemed that any inadvertent construction Phase, or Operation Phase related surface water run-off would have the potential to lead to significant effects in these SPAs relating to the Key indicator **'Changes in Water Quality and/or Resource'**. - In addition, and although not relied upon whatsoever in this determination of 'no significant impact', it is noted that a suite of SUDS measures have been incorporated into the proposed design as per the requirements of the Greater Dublin Regional Code of Practice for Drainage Works and the policies of the South Dublin County Development Plan 201-2022. These measures have been included to contribute to both the improvement of water quality in receiving waterbodies and the easing of pressures on existing drainage networks; and will further reduce any risk of local surface water related pollution as a result of the operation of the Proposed Development.
Is mitigation/ further assessment required to rule out any significant likely effects on the above European Sites based on the impacts identified above?	
No	- No further assessment or mitigation is required to ensure no significant effects on any European Sites.

Table 6. Summary of the potential for likely significant effects on European Sites identified as maintaining a S-P-R linkage with the Proposed Development, using key indicators.

Site	Habitat Loss / Alteration	Habitat or Species Fragmentation	Disturbance and/or Displacement of Species	Changes in Population Density	Changes in Water Quality and/or Resource	Stage 2 AA Required
South Dublin Bay SAC [000210]	No	No	No	No	No	No
North Dublin Bay SAC [000206]	No	No	No	No	No	No
South Dublin Bay and River Tolka Estuary SPA [004024]	No	No	No	No	No	No
North Bull Island SPA [004006]	No	No	No	No	No	No

3.6 Potential for In-combination Effects

3.6.1 Existing Granted Developments

A search of planning applications located within the vicinity of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and South Dublin County Council's Planning Application Map. Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European Sites. Longer-term developments granted outside of this time period were also considered where applicable.

It is noted that many of the developments within the vicinity of the Site of the Proposed Development are applications from more than 5 years ago, that have since been completed. Other more recent applications are largely for small-scale works e.g., sports floodlighting columns.

Several more recent applications are detailed below:

1. **Planning Ref**: SD17A/0049 **Application Date**: 21/8/2017 **Applicant:** Roadstone Group Sports Club **Decision:** GRANT PERMISSION **Granted:** 23/10/2017 **Distance from Proposed Development:** Adjacent to the east.

   Description: Construction of an extension and alterations to the existing sports centre building which will include alterations to part of the existing ground floor plan and the construction of a new single storey flat roof extension measuring 303sq.m to the rear

and side of existing building. Accommodation will include 4 changing rooms, physio room, gym, refs room, coaching room, TV lounge, store all other associated facilities and site works.

2. **Planning Ref**: SD21A/0043 **Application Date**: 25/2/2021 **Applicant:** Roadstone Group Sports Club **Decision:** GRANT PERMISSION **Granted:** 31/5/2021 **Distance from Proposed Development:** Adjacent to the east.

   Description: 6 floodlighting poles with varying pole top luminaire assemblies (4 poles will be 18.29m high and 2 poles are 12.19m high) located around existing grass pitches and all associated site works.

3. **Planning Ref**: SD21A/0039 **Application Date**: 10/6/2021 **Applicant:** The Commissioners of Public Works in Ireland **Decision:** GRANT PERMISSION **Granted:** 13/8/2021 **Distance from Proposed Development:** 100m to the south.

   Description: Installation of 2 x 3 metre high extract flues from proposed laboratories; construction of a covered boat storage compound within a secured parking area formed with a new 3 metre high security fence with access gates to the rear (north-west) side of the site, internal alteration within the existing building and all associated site works.

4. **Planning Ref**: SD16A/0326 **Application Date**: 25/11/2016 **Applicant:** Bradawl Limited **Decision:** GRANT PERMISSION **Granted:** 07/2/2017 **Distance from Proposed Development:** Adjacent to the north-west.

   Description: Provision of 3 HGV fuelling pumps located adjacent to the existing truck wash with 2 fuel dispensing islands, 2 illuminated totem signs (c.6.5m in height), 5 underground diesel storage tanks (40,000 litre capacity in each). Ancillary lighting and site landscaping works. Access to development is provided off the Old Naas Road and permission is also sought for the reinstatement and extension of the public footpath located directly north and south of the existing entrance to the site.

5. **Planning Ref**: SD16A/0293 **Application Date**: 2/6/2017 **Applicant:** Roadstone Limited **Decision:** GRANT PERMISSION **Granted:** 07/2/2017 **Distance from Proposed Development:** 225m to the east.

   Description: Retention of the following: (1) Quarry control office & garage (1835sq.m) & 5 storage portacabins (14sq.m,14sq.m, 14sq.m 12.6sq.m & 8.4sq.m); (2) ESB switching station (58sq.m) & substation (36sq.m); (3) spare parts storage area (c. 2445sq.m); (4) maintenance shed (117.7sq.m); (5) car park (30 spaces & 627.7sq.m); (6) 2 lampost (10.5m high); (7) 'Clause 804' plant (1177.7sq.m); (8) wet sand plant (684.4sq.m); (9) 2 weighbridges (325.4sq.m); (10) general waste storage area (c. 12.5sq.m); (11) quarry fuelling station with two 9m3 fuel tanks (126.8sq.m); (12) metal recycling storage area (c.310sq.m); (13) truck parking area (c. 6632sq.m); (14) 1 security camera post (2.2m high); (15) 1 lamp post (9.2 high); (16) hydrocarbon interceptor; (17) tyre storage bays (c.140sq.m); (18) dry sand pant (2203.4sq.m); (19) 1 lamp post (10.3m high); (20) quarry stores (163sq.m); (21) effluent holding tank; (22) security station (13.9sq.m) and 2 lamp post (6.5m high); (23) wheel wash (236.3sq.m); (24) 'Tricel' effluent treatment system; (25) settlement lagoon system (3208.9sq.m);

(26) sand polishing filter; (27) security fence (2.9m high); (28) overburden storage mound (7.3 ha); (29) perimeter screening berm (5m to 8m high by 1.6km long & 6ha); (30) perimeter screening berm (5.2m high by 310m long & 7930sq.m); (31) plant storage area (8356sq.m); (32) perimeter screening berm (9.2m high by 147 long & 4770sq.m); (33) screening berm (8.4m high by 340m long & 5257sq.m); (34) perimeter screening berm (6.5m high by 240m long & 5665sq.m); (35) perimeter screening berm (9m high by 320m long & 1ha); (36) screening berm (2.7m high by 245m long &3125sq.m); (37) screening berm (3.5m high by 950m long & 1.1ha); (38) screening berm (3m high by 243m long & 3030sq.m); (39) screening berm (3.3m high by 238m long & 2088sq.m); (40) settlement pond area (6.4ha); (41) screening berm (3.5m high by 379m long & 4793sq.m); (42) screening berm (3.1m high by 244m long & 3743sq.m); (43) internal access road (285m long) to Outer Ring Road entrance/exit, gate, pedestrian gates, footpaths, paladin fencing (1.8m high) & 6 lampposts (6m high); (44) screening berm (5.2m high by 215m long & 4040sq.m); (45) relocation of entrance to C&D recovery site permitted under SD02A/0167 & all ancillary site works; internal roads & landscape planting.

6. **Planning Ref**: SD21A/0012 **Application Date**: 27/1/2021 **Applicant:** Roadstone Limited **Decision:** GRANT PERMISSION **Granted:** 07/2/2017 **Distance from Proposed Development:** 280m to the east.
   Description: Deepening of part (c. 43ha.) of the existing and permitted quarry (An Bord Pleanala refs. 301177 & QD0026) to a quarry floor level of -10mOD using conventional blasting techniques; use of mobile processing plant; product stockpiles; final restoration scheme and all ancillary works within a planning application area of 49.4ha and within the overall landholding of 241.6ha and will be accompanied by an Environmental Impact Assessment Report (EIAR).

With regard the above granted application (Ref: SD21A/0012), involving the continued extraction activities in Belgard Quarry by Roadstone Limited, it is noted that an Appropriate Assessment Screening for this Development was prepared by SLR Consulting (Ireland) Ltd. (SLR, 2021) as part of this application.

The AA screening describes the drainage arrangements of the development as being part of the wider drainage arrangements of the quarry, as managed by Roadstone in compliance with the conditions of the Section 261 conditions (Quarry Ref. SDQU05A/2). The activities involve limestone extraction below the water table; with the waters drained via sumps to enable the works. These waters are used in ancillary manufacturing processes and dust suppression, with excess waters from the Site discharged to the Kingswood Stream west of the quarry under the existing discharge licence (Ref: WPW/472/007-1). Before discharging to the stream, the waters are treated by an Integrated Constructed Wetland (ICW) consisting of two wetland areas of 10,700m^2 and pass through a hydrocarbon interceptor immediately prior to entering the stream. The AA screening notes that the development in question doesn't require any changes to the existing discharge licence arrangement.

The SLR Assessment concludes that no significant effects would arise from the above extraction, due largely to the distances involved between the Site and downstream European sites and subsequent dilution capacity in the receiving waterbodies, the nature of the waters being discharged (ground and surface waters) and the nature of the QIs listed for the European Sites in Dublin Bay. This is noted to be the case even in the absence of the ICW

and water treatment measures. The report goes on to state that significant cumulative effects involving the development and other plans and projects will not arise due to this lack of any identified impact pathways linking the Site and the European sites in question.

As such, it can be concluded that the Proposed Development at Gordon Park, Kingswood, does not have the potential to act in-combination with the above extraction activities, or any other nearby development for that matter, and lead to likely significant effects on downstream European Sites. The nature of the Proposed Development itself (Small scale residential), along with the tenuous nature of the hydrological connection between the Site and downstream European Sites, rules out the possibility of significant effects on said sites from the Proposed Development and, thus, also the possibility of significant in-combination effects involving other plans/projects.

3.6.2 Operation of Ringsend WwTP

In June 2018 Irish Water applied for (and subsequently received) planning permission for upgrade works to the Ringsend WwTP facility. These are currently on-going and will increase the capacity of the facility from 1.6 million PE to 2.4 million PE. This plant upgrade will result in an overall reduction in the final effluent discharge of several parameters from the facility including BOD, suspended soils, ammonia, DIN and MRP. An Environmental Impact Assessment Report (EIAR) was submitted by Irish Water as part of this application. The EIAR contains sections relating to Marine Biodiversity and Terrestrial Biodiversity, and each contains a section on the 'do-nothing scenario'. These review the effects of the WwTP on biodiversity in Dublin Bay *in the absence of the upgrade works* and so are relevant to this report.

The EIAR report acknowledges that under the do-nothing scenario "the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WwTP", which could result in a decline in biodiversity and the deterioration of the biological status of Dublin Bay (Irish Water, 2018). Nevertheless, these negative impacts of nutrient over-enrichment are considered "unlikely" (Irish Water, 2018). This is because historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna. The EIAR notes that "although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area." Furthermore, the EIAR notes that significant impacts on waterbird populations foraging on invertebrates in Dublin Bay due to nutrient over-enrichment are "unlikely" to occur (Irish Water, 2018). What is important in the context of this AA screening report is that the do-nothing scenario predicts that nutrient and suspended solid loads from the WwTP will "continue at the same levels and the impact of these loadings should maintain the same level of effects on marine biodiversity" and that "if the *status quo* is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay."

Therefore, it can be concluded based on scientific evidence that significant effects on marine biodiversity and the European sites within Dublin Bay from the *current* operation of Ringsend WwTP are not occurring. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend. Thus, in the absence of any upgrading works, significant effects

to European sites as a result of in-combination effects involving waste waters produced by the Proposed Development can be excluded.

3.6.3 Relevant Policies and Plans

In addition, the following Policies and Plans were reviewed and considered for possible in-combination effects with the Proposed Development.

- South Dublin County Development Plan 2016-2022

It is noted that there is potential for proposed plans and projects within the Kingswood/Clondalkin area, and the areas covered by the South Dublin County Development Plan to have cumulative, negative impacts on conditions in Dublin Bay; via rivers, streams and other surface water features. However, the core strategy, policies and objectives of the above County Development Plan have been developed to anticipate and avoid the need for developments that would be likely to significantly affect the integrity of any European Site.

Furthermore, such developments are required to conform to the relevant regulatory provisions for the prevention of pollution, nuisance or other environmental effects likely to significantly affect the integrity of European Sites. In addition, sustainable development, including SUDS measures for all new developments; is inherent in the objectives of all development plans within the Greater Dublin Area, as per the Greater Dublin Regional Code of Practice for Drainage Works.

Upon examination of the above listed plans and projects within the general vicinity of the Proposed Development, and adopting a precautionary approach, it is concluded that there is no potential for significant in-combination effects on Dublin Bay European Sites involving the Proposed Development.

4 CONCLUDING STATEMENT

The Proposed Development at Gordon Park, Kingswood, Dublin 22 has been assessed for its potential to result in likely significant effects on European Sites, with the following factors considered:

- the nature, size and location of the Proposed Development and possible impacts arising from the associated construction works and its operational lifetime.
- the potential for in-combination effects alongside other plans and projects leading to effects on European Sites.
- the qualifying interests and conservation objectives of all relevant European Sites.

In conclusion, upon the examination, analysis, and evaluation of the relevant information, and in applying the precautionary principle; it is concluded by the authors of this report that, on the basis of objective information, **the possibility may be excluded** that the Proposed Development will have any significant effect on the European Sites listed below:

- Wicklow Mountains SAC [002122]
- Rye Water Valley/Carton SAC [001398]
- Glenasmole Valley SAC [001209]
- Red Bog, Kildare SAC [000397]

- South Dublin Bay SAC [000210]
- North Dublin Bay SAC [000206]
- Wicklow Mountains SPA [004040]
- South Dublin Bay and River Tolka Estuary SPA [004024]
- North Bull Island SPA [004006]
- Poulaphouca Reservoir SPA [004063]

These complete, precise, and definitive findings, based on the best available scientific evidence, remove all reasonable scientific doubt that the Proposed Development will have any significant effects on the European Sites detailed above. It should be noted that no measures intended to avoid or reduce the potential harmful effects of the project on any European Site have been taken into account in this Appropriate Assessment Screening Report and its conclusions.

5 REFERENCES

Chivers, L., Lundy, M., Colhoun, K., Newton, S., Houghton, J. & Reid, N. (2012). Foraging trip time-activity budgets and reproductive success in the black-legged kittiwake. Mar Ecol Prog Ser 456: 269–277.

DEHLG. (2010). Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. Department of Environment, Heritage and Local Government.

DHPLG. (2018). River Basin Management Plan for Ireland 2018-2021. Department of Housing, Planning and Local Government.

Environmental Protection Agency (EPA). (2002). Guidelines on information to be contained in Environmental Impact Statements. Environmental Protection Agency, Ireland.

Environmental Protection Agency (EPA). (2017). Guidelines on information to be contained in Environmental Impact Assessment Reports (Draft). Environmental Protection Agency, Ireland.

EPA, (2021). Environmental Protection Agency Online Mapping [ONLINE] Available at: http://www.epa.ie/ [Accessed Nov 2021].

Environmental Protection Agency (EPA). (2012) Application for a Waste Water Discharge Licence from Wicklow County Council, for the agglomeration named Blessington, Reg. No. D0063-01. Inspectors Report.

European Commission. (2001). Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Communities, Luxembourg.

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

Franklin, A. N. (2002). *What is Habitat Fragmentation? Studies in Avian* Biology, 20-29.

Masters-Williams, H. Heap, A. Kitts, H., Greenshaw, L., Davis, S., Fisher, P., Hendrie, M. and Owens, D. (2001). *Control of Water Pollution from Construction Sites - Guide to Good Practice* (SP156). Ciria, London.

Masters-Williams, H. Heap, A. Kitts, H., Greenshaw, L., Davis, S., Fisher, P., Hendrie, M. and Owens, D. (2001). *Control of Water Pollution from Construction Sites – A Guidance for Consultants and Contractors (C532)*. Ciria, London.

NBDC (2021). National Biodiversity Data Centre online mapping [ONLINE] Available at: http://maps.biodiversityireland.ie/Map.aspx. [Accessed Nov 2021].

NPWS. (2010). Circular NPW 1/10 & PSSP 2/10. *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Department of Environment, Heritage and Local Government.

NPWS (2013a). Site Synopsis: Glensamole Valley SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013b). Site Synopsis: North Dublin Bay SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013c). Site Synopsis: Red Bog, Kildare SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013d). Site Synopsis: Rye Water Valley/Carton SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014a). Site Synopsis: North Bull Island SPA. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014b). Site Synopsis: Wicklow Mountains SPA. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014c). Site Synopsis: Poullaphouca Reservoir SPA. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015a). Site Synopsis: South Dublin Bay SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015b). Site Synopsis: South Dublin Bay and River Tolka Estuary SPA. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2017). Site Synopsis: Wicklow Mountains SAC. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

Office of the Planning Regulator (OPR) (2021). *OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management.* Dublin.

Pendlebury, C., Zisman, S., Walls, R., Sweeney, J., Mcloughlin, E., Robinson, C., Turner, L. & Loughrey, J. (2011) Literature review to assess bird species connectivity to Special Protection Areas. Scottish Natural Heritage Commissioned Report No. 390.

SLR Consulting (Ireland) Ltd. (2021). Appropriate Assessment Screening Report. Belgard Quarry – Deepening of Existing Quarry, Fortunestown, Tallaght, Dublin 24. SLR ref: 501.00180.00190.

Smith, G.F., O'Donoghue, P, O'Hora K., and Delaney, E. (2010). Best Practice Guidance for Habitat Survey and Mapping. Published by the Heritage Council.

APPENDIX I - NATURA 2000 NPWS SITE SYNOPSES

SITE SYNOPSIS

Site Name: South Dublin Bay SAC

Site Code: 000210

This site lies south of the River Liffey in Co. Dublin, and extends from the South Wall to the west pier at Dun Laoghaire. It is an intertidal site with extensive areas of sand and mudflats. The sediments are predominantly sands but grade to sandy muds near the shore at Merrion Gates. The main channel which drains the area is Cockle Lake.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats
[1210] Annual vegetation of drift lines
[1310] Salicornia and other annuals colonising mud and sand
[2110] Embryonic shifting dunes

The bed of Dward Eelgrass (*Zostera noltii*) found below Merrion Gates is the largest stand on the east coast. Green algae (*Enteromorpha* spp. and *Ulva lactuca*) are distributed throughout the area at a low density. Fucoid algae occur on the rocky shore in the Maretimo to Dún Laoghaire area. Species include *Fucus spiralis, F. vesiculosus, F. serratus, Ascophyllum nodosum* and *Pelvetia canaliculata.*

Several small, sandy beaches with incipient dune formation occur in the northern and western sectors of the site, notably at Poolbeg, Irishtown and Merrion/ Booterstown. The formation at Booterstown is very recent. Drift line vegetation occurs in association with the embryonic and incipient fore dunes. Typically drift lines occur in a band approximately 5 m wide, though at Booterstown this zone is wider in places. The habitat occurs just above the High Water Mark and below the area of embryonic dune. Species present are Sea Rocket (*Cakile maritima*), Frosted Orache (*Atriplex laciniata*), Spear-leaved Orache (*A. prostrata*), Prickly Saltwort (*Salsola kali*) and Fat Hen (*Chenopodium album*). Also occurring is Sea Sandwort (*Honkenya peploides*), Sea Beet (*Beta vulgaris* subsp. *maritima*) and Annual Sea-blite (*Suaeda maritima*). A small area of pioneer saltmarsh now occurs in the lee of an embryonic sand dune just north of Booterstown Station. This early stage of saltmarsh development is here characterised by the presence of pioneer stands of glassworts (*Salicornia* spp.) occurring below an area of drift line vegetation. As this is of very recent origin, it covers a small area but ample areas of substrate and shelter are available for the further development of this habitat.

Lugworm (*Arenicola marina*), Cockles (*Cerastoderma edule*) and annelids and other bivalves are frequent throughout the site. The small gastropod *Hydrobia ulvae* occurs on the muddy sands off Merrion Gates.

South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. The principal species are Oystercatcher (1215), Ringed Plover (120), Sanderling (344), Dunlin (2628) and Redshank (356) (average winter peaks 1996/97 and 1997/98). Up to 100 Turnstones are usual in the south bay during winter. Brent Goose regularly occur in numbers of international importance (average peak 299). Bar-tailed Godwit (565), a species listed on Annex I of the E.U. Birds Directive, also occur.

Large numbers of gulls roost in South Dublin Bay, e.g. 4,500 Black-headed Gulls in February 1990; 500 Common Gulls in February 1991. It is also an important tern roost in the autumn, regularly holding 2000-3000 terns including Roseate Terns, a species listed on Annex I of the E.U. Birds Directive. South Dublin Bay is largely protected as a Special Protection Area.

At low tide the inner parts of the south bay are used for amenity purposes. Bait-digging is a regular activity on the sandy flats. At high tide some areas have wind-surfing and jet-skiing.

This site is a fine example of a coastal system, with extensive sand and mudflats, and incipient dune formations. South Dublin Bay is also an internationally important bird site.

SITE SYNOPSIS

SITE NAME: NORTH BULL ISLAND SPA

SITE CODE: 004006

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Green algal mats (*Ulva* spp.) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (*Arenicola marina*) and Ragworm (*Hediste diversicolor*).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) - all figures are mean peaks for the five winters between 1995/96 and 1999/2000. The site is one of the most important in the country for Light-bellied Brent Goose. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Grey Plover (517), Golden Plover (2,033), Knot (2,837), Sanderling (141), Dunlin (4,146), Curlew (937), Redshank (1,431), Turnstone (157) and Black-headed Gull (2,196). The populations of Pintail and Knot are of particular note as they comprise 14% and 10% respectively of the all-Ireland population totals. Other species that occur regularly in winter include Grey Heron, Little Egret, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser, Ringed Plover and Greenshank. Gulls are a feature of the site during winter and, along with the nationally important population of Black-headed Gull (2,196), other species that occur include Common Gull (332) and Herring Gull (331). While some of the birds

also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter.

The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to 5 present in some winters.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the E.U. Birds Directive, notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl. North Bull Island is a Ramsar Convention site, and part of the North Bull Island SPA is a Statutory Nature Reserve and a Wildfowl Sanctuary.

25.3.2014

SITE SYNOPSIS

SITE NAME: SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA

SITE CODE: 004024

The South Dublin Bay and River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

In the south bay, the intertidal flats extend for almost 3 km at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The landward boundary is now almost entirely artificially embanked. There is a bed of Dwarf Eelgrass (*Zostera noltii*) below Merrion Gates which is the largest stand on the east coast. Green algae (*Ulva* spp.) are distributed throughout the area at a low density. The macro-invertebrate fauna is well-developed, and is characterised by annelids such as Lugworm (*Arenicola marina*), *Nephthys* spp. and Sand Mason (*Lanice conchilega*), and bivalves, especially Cockle (*Cerastoderma edule*) and Baltic Tellin (*Macoma balthica*). The small gastropod Spire Shell (*Hydrobia ulvae*) occurs on the muddy sands off Merrion Gates, along with the crustacean *Corophium volutator*. Sediments in the Tolka Estuary vary from soft thixotrophic muds with a high organic content in the inner estuary to exposed, well-aerated sands off the Bull Wall. The site includes Booterstown Marsh, an enclosed area of saltmarsh and muds that is cut off from the sea by the Dublin/Wexford railway line, being linked only by a channel to the east, the Nutley stream. Sea water incursions into the marsh occur along this stream at high tide. An area of grassland at Poolbeg, north of Irishtown Nature Park, is also included in the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Redshank, Black-headed Gull, Roseate Tern, Common Tern and Arctic Tern. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of the SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex – all counts for wintering waterbirds are five year mean peaks for the period 1995/96 to 1999/2000. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. An internationally important population of Light-bellied Brent Goose (368) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at

Merrion. At the time of designation the site supported nationally important numbers of a further nine species: Oystercatcher (1,145), Ringed Plover (161), Grey Plover (45), Knot (548), Sanderling (321), Dunlin (1,923), Bar-tailed Godwit (766), Redshank (260) and Black-headed Gull (3,040). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (127) and Turnstone (52). Little Egret, a species which has recently colonised Ireland, also occurs at this site.

South Dublin Bay is a significant site for wintering gulls, with a nationally important population of Black-headed Gull, but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter.

Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the E.S.B. dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey in 1995 recorded nationally important numbers of Common Tern nesting here (52 pairs). The breeding population of Common Tern at this site has increased, with 216 pairs recorded in 2000. This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

South Dublin Bay is an important staging/passage site for a number of tern species in the autumn (mostly late July to September). The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. This site is selected for designation for its autumn tern populations: Roseate Tern (2,000 in 1999), Common Tern (5,000 in 1999) and Arctic Tern (20,000 in 1996).

The South Dublin Bay and River Tolka Estuary SPA is of ornithological importance as it supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further nine wintering species. Furthermore, the site supports a nationally important colony of breeding Common Tern and is an internationally important passage/staging site for three tern species. It is of note that four of the species that regularly occur at this site are listed on Annex I of the E.U. Birds Directive, i.e. Bar-tailed Godwit, Common Tern, Arctic Tern and Roseate Tern. Sandymount Strand/Tolka Estuary is also a Ramsar Convention site.

30.5.2015

SITE SYNOPSIS

Site Name: North Dublin Bay SAC

Site Code: 000206

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats
[1210] Annual Vegetation of Drift Lines
[1310] *Salicornia* Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[2110] Embryonic Shifting Dunes
[2120] Marram Dunes (White Dunes)
[2130] Fixed Dunes (Grey Dunes)*
[2190] Humid Dune Slacks
[1395] Petalwort (*Petalophyllum ralfsii*)

North Bull Island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. Marram Grass (*Ammophila arenaria*) is dominant on the outer dune ridges, with Lyme-grass (*Leymus arenarius*) and Sand Couch (*Elymus farctus*) on the foredunes. Behind the first dune ridge, plant diversity increases with the appearance of such species as Wild Pansy (*Viola tricolor*), Kidney Vetch (*Anthyllis vulneraria*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Common Restharrow (*Ononis repens*), Yellow-rattle (*Rhinanthus minor*) and Pyramidal Orchid (*Anacamptis pyramidalis*). In these grassy areas and slacks, the scarce Bee Orchid (*Ophrys apifera*) occurs.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (*Alnus glutinosa*). The water table is very near the surface and is only slightly brackish. Saltmarsh Rush (*Juncus maritimus*) is the dominant species, with Meadowsweet (*Filipendula ulmaria*) and Devil's-bit Scabious (*Succisa pratensis*) being frequent. The orchid flora is notable and includes Marsh Helleborine (*Epipactis palustris*), Common

Twayblade (*Listera ovata*), Autumn Lady's-tresses (*Spiranthes spiralis*) and Marsh Orchids (*Dactylorhiza* spp.).

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels according to the vegetation types present. On the lower marsh, Glasswort (*Salicornia europaea*), Common Saltmarsh-grass (*Puccinellia maritima*), Annual Sea-blite (*Suaeda maritima*) and Greater Sea-spurrey (*Spergularia media*) are the main species. Higher up in the middle marsh Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*) and Thrift (*Armeria maritima*) appear. Above the mark of the normal high tide, species such as Common Scurvygrass (*Cochlearia officinalis*) and Sea Milkwort (*Glaux maritima*) are found, while on the extreme upper marsh, the rushes *Juncus maritimus* and *J. gerardi* are dominant. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

The habitat 'annual vegetation of drift lines' is found in places, along the length of Dollymount Strand, with species such as Sea Rocket (*Cakile maritima*), Oraches (*Atriplex* spp.) and Prickly Saltwort (*Salsola kali*).

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "*Salicornia* flat", which is dominated by *Salicornia dolichostachya*, a pioneer glasswort species, and covers about 25 ha. Beaked Tasselweed (*Ruppia maritima*) occurs in this area, along with some Narrow-leaved Eelgrass (*Zostera angustifolia*). Dwarf Eelgrass (*Z. noltii*) also occurs in Sutton Creek. Common Cordgrass (*Spartina anglica*) occurs in places but its growth is controlled by management. Green algal mats (*Enteromorpha* spp., *Ulva lactuca*) cover large areas of the flats during summer. These sediments have a rich macrofauna, with high densities of Lugworms (*Arenicola marina*) in parts of the north lagoon. Mussels (*Mytilus edulis*) occur in places, along with bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*. The small gastropod *Hydrobia ulvae* occurs in high densities in places, while the crustaceans *Corophium volutator* and *Carcinus maenas* are common. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three rare plant species which are legally protected under the Flora (Protection) Order, 1999 have been recorded on the North Bull Island. These are Lesser Centaury (*Centaurium pulchellum*), Red Hemp-nettle (*Galeopsis angustifolia*) and Meadow Saxifrage (*Saxifraga granulata*). Two further species listed as threatened in the Red Data Book, Wild Clary/Sage (*Salvia verbenaca*) and Spring Vetch (*Vicia lathyroides*), have also been recorded. A rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and has recently been confirmed as still present. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.

North Dublin Bay is of international importance for waterfowl. During the 1994/95 to 1996/97 period the following species occurred in internationally important numbers (figures are average maxima): Brent Goose 2,333; Knot 4,423; Bar-tailed Godwit 1,586. A further 14 species occurred in nationally important concentrations - Shelduck 1505; Wigeon 1,166; Teal 1,512; Pintail 334; Shoveler 239; Oystercatcher 2,190; Ringed Plover 346; Grey Plover 816; Sanderling 357; Dunlin 6,238; Black-tailed Godwit 156; Curlew 1,193; Turnstone 197 and Redshank 1,175. Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Brent Goose, Oystercatcher, Ringed Plover, Sanderling and Dunlin).

The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. Ringed Plover, Shelduck, Mallard, Skylark, Meadow Pipit and Stonechat also nest. A well-known population of Irish Hare is resident on the island

The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland (from the Orders Diptera, Hymenoptera and Hemiptera).

The main land uses of this site are amenity activities and nature conservation. The North Bull Island is the main recreational beach in Co. Dublin and is used throughout the year. Much of the land surface of the island is taken up by two golf courses. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrrounding intertidal flats. The site is used regularly for educational purposes. North Bull Island has been designated a Special Protection Area under the E.U. Birds Directive and it is also a statutory Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site.

This site is an excellent example of a coastal site with all the main habitats represented. The site holds good examples of nine habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a numbers of rare and scarce plants including some which are legally protected. Its proximity to the capital city makes North Dublin Bay an excellent site for educational studies and research.