NATURA IMPACT STATEMENT IN SUPPORT OF APPROPRIATE ASSESSMENT OF A PROPOSED DEVELOPMENT AT PALMYRA, RATHFARNHAM, CO DUBLIN

JULY 2021

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Prepared
July 2021 by:

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EXECUTIVE SUMMARY

Beckett Developments Ltd are applying to South Dublin Co. Council for Planning Permission for the construction of 8 No. houses comprising of 1 No. 3 bedroom 2 storey detached, Type B1 (c.122 m2) Site 1, 1 No. 4 bedroom 2 storey detached type B2 (c.134 m2) Site 2, 6 No. 4 bedroom 2 storey semidetached Type A1 ((c.148 m2) Sites 3-8 inclusive, all associated on and off site development works ,landscaping ,boundary treatments, removal of existing street boundary screen wall and the provision of vehicular and pedestrian access to Grangebrook Avenue on infill site of circa 0.226 ha., part of the grounds of "Palmyra", Whitechurch Road (Grangebrook Avenue) Rathfarnham, Dublin 16.

In November 2020, FERS Ltd. was commissioned to undertake and Appropriate Assessment Screening of the proposed development. Screening having identified significant potential impacts, Phase II Appropriate Assessment was undertaken, and a Natura Impact Statement prepared. Following an examination, analysis, and evaluation of the relevant information, and applying the precautionary principle, it is considered that there would be no adverse impact of the proposed development (assuming the implementation of mitigation measures) on the Qualifying Interests, nor the attainment of specific conservation objectives, either alone or in-combination with other plans or projects on the Natura 2000 sites described herein.

In order for Appropriate Assessment (AA) to comply with the criteria set out in the Habitats Directive and Part XAB of the Planning and Development Act 2000, an AA undertaken by the Competent Authority must include an examination, analysis, evaluation, findings, conclusions, and a final determination.

1 Introduction

1.1 FERS Ltd. Company background

Forest, Environmental Research and Services have been conducting ecological surveys and research since the company's formation in 2005 by Dr Patrick Moran and Dr Kevin Black. Dr Moran, the principal ecologist with FERS, holds a 1st class honours degree in Environmental Biology (UCD), a Ph.D. in Ecology (UCD), a Diploma in EIA and SEA management (UCD) a Diploma in Environmental and Planning Law (King's Inn) and a M.Sc. in Geographical Information Systems and Remote Sensing (University of Ulster, Coleraine). Patrick has in excess of 20 years of experience in carrying out ecological surveys on both an academic and a professional basis. Dr Emma Reeves, senior ecologist with FERS holds a 1st class honours degree in Botany, and a Ph.D. in Botany. Emma has in excess of 10 years of experience in undertaking ecological surveys on an academic and professional basis. Ciarán Byrne, a senior ecologist with FERS holds a 1st class honours degree in Environmental Management (DIT) and a M.Sc. in Applied Science/Ecological Assessment (UCC). Ciarán has in excess of 5 years in undertaking ecological surveys on both an academic and a professional basis.

FERS client list includes National Parks and Wildlife Service, An Bord Pleanála, various County Councils, the Heritage Council, Teagasc, University College Dublin, the Environmental Protection Agency, Inland Waterways Association of Ireland, the Department of Agriculture, the Office of Public Works and Coillte in addition to numerous private individuals and companies. FERS Ltd. has prepared in excess of 300 Appropriate Assessment Screenings/Natura Impact Statements for a wide range of plans and projects.

1.2 The aim of this report

This report has been prepared in compliance with Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG 2009, February 2010) and the European Communities (Birds and Natural Habitats) Regulations 2011 (DoEHLG 2011) in support of the Appropriate Assessment of a proposed development at Palmyra, Rathfarnham, Co. Dublin. This report provides the information required in order to establish whether or not the proposed development is likely to have a significant ecological impact on any Natura 2000 sites, in the context of their

conservation objectives and specifically on the habitats and species for which the sites have been designated.

This report has similarly been prepared with regard to relevant rulings by the Court of Justice of the European Union (CJEU), the High Court, and the Supreme Court including but not limited to:

- [2013] C-258/11 Peter Sweetman and Others v An Bord Pleanála. The CJEU ruled that Article 6 (3) of Council Directive 92/43 / EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that a project not directly linked to it is not immediately necessary for the management of a site to prejudice the integrity of that site if it is likely to prevent the preservation of the constituent characteristics of the site concerned in relation to the presence of a natural priority habitat whose purpose is to maintain gave the reason for registering that site in the list of sites of Community importance within the meaning of that directive. For this verification, the precautionary principle must be applied;
- [2018] C – 164/17 Edel Grace and Peter Sweetman v An Bord Pleanála. The CJEU ruled that Article 6 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project, the part of the site that is in fact likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned; that fact falls to be considered, if need be, under Article 6(4) of the directive;
- [2018] C-323/17 People Over Wind and Sweetman v Coillte Teoranta - The (CJEU) ruled that Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the

screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site;

- [2018] C-461/17 Holohan v An Bord Pleanála – The CJEU ruled that:

1. Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

2. Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

3. Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned.

4. Article 5(1) and (3) of, and Annex IV to, Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, must be interpreted as meaning that the developer is obliged to supply information that expressly addresses the significant effects of its project on all species identified in the statement that is supplied pursuant to those provisions.

5. Article 5(3)(d) of Directive 2011/92 must be interpreted as meaning that the developer must supply information in relation to the environmental impact of both the chosen option and of all the main alternatives studied by the developer, together with the reasons for his choice, taking into account at least the environmental effects, even if such an alternative was rejected at an early stage.

- [2018] IESC 31 Connelly v An Bord Pleanála – Appropriate Assessment must contain complete, precise, and definitive findings;
- [2019] IEHC 84 Kelly v An Bord Pleanála - The Irish High Court concluded that SUDS form part of the development and are not mitigation measures which a competent authority cannot consider at the screening for AA stage.

Furthermore, there have been a number of recent Judicial Reviews that are pertinent as regards this report (e.g. [2020] No. 238 J.R.).

1.3 An outline of the Appropriate Assessment process

The "Habitats Directive" (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and lists certain habitats and species that must be protected within wildlife conservation areas, considered to be important at a European as well as at a national level. A "Special Conservation Area" or SAC is a designation under the Habitats Directive.

The "Birds Directive" (Council Directive 2009/147/EC on the Conservation of Wild Birds) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting, and wintering areas. This directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection. A "Special Protection Area" or SPA, is a designation under The Birds Directive.

Special Areas of Conservation and Special Protection Areas form a pan-European network of protected sites known as Natura 2000 sites.

The Habitats Directive sets out the protocol for the protection and management of SACs. The Directive sets out key elements of the system of protection including the requirement for Appropriate Assessment of plans and projects. The requirements for an Appropriate Assessment are set out in the EU Habitats Directive. Articles 6(3) and 6(4) of the Directive respectively, state:

> *"...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...."*
>
> *"...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 over-riding public interest, including those of 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...."*

1.4 Methodology for Appropriate Assessment

A number of guidance documents on the appropriate assessment process have been consulted during the preparation of this NIS. These are:

- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2000);
- 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 (Nov. 2001 – published 2002);
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (2007);
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG 2009, Revised February 2010);
- European Communities (Birds and Natural Habitats) Regulations 2011 (DoEHLG 2011); and
- Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Brussels, 21.11.2018 C (2018) 7621 final.

The assessment requirements of Article 6 are generally dealt with in a stage-by-stage approach. The stages as outlined in "Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities" are:

1.4.1 Stage (1) Appropriate Assessment (Habitats Directive) Screening

This initial process identifies the likely impacts of a proposed project or plan upon a Natura 2000 site, either alone, or in combination with other projects or plans and considers whether these impacts are likely to be significant. A recent judgement in the ECJ (C323/17) that has large implications for appropriate assessment screening in Ireland has found that:

"...Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site..."

1.4.2 Stage (2) Preparation of Natura Impact Statement

The consideration of the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other projects or plans to the sites structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.

1.4.3 Stage (3) Assessment of Alternative Solutions

The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.

1.4.4 Stage (4) Assessment where Adverse Impacts Remain

An assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

At each stage, there is a determination as to whether a further stage in the Appropriate Assessment process is required. If, for example, the conclusions of the Screening stage indicate that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further. Appropriate Assessment stages 1 and 2 deal with the main requirements for assessment under Article 6.3. Stage 3 may be part of Article 6(3) or a necessary precursor for Stage 4. This report is comprised of the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of Appropriate Assessment, the screening process (as set out in the EU Guidance documents).

EU guidance states:

"...This stage examines the likely effects of a project or plan, either alone or in combination with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant...".

This report has been undertaken in accordance with the European Commission's Guidance on Appropriate Assessment (European Commission, 2001) which comprises the following:

1. Description of the Plan.
2. Identification of Natura 2000 sites potentially affected by the Plan.
3. Identification and description of individual and cumulative impacts likely to result from the Plan.
4. Assessment of the significance of the impacts identified on the conservation objectives of the site(s).
5. Exclusion of sites where it can be objectively concluded that there will be no significant impacts on conservation objectives.

1.5 Consultations

The primary body consulted with regard to matters involving Natura 2000 sites is the National Parks and Wildlife Service (NPWS). The role of the NPWS is:

- To secure the conservation of a representative range of ecosystems and maintain and enhance populations of flora and fauna in Ireland.
- To implement the EU Habitats and Birds Directives.
- To designate and advise on the protection of Natural Heritage Areas (NHA) having particular regard to the need to consult with interested parties.
- To make the necessary arrangements for the implementation of National and EU legislation and policies and for the ratification and implementation of the range of international Conventions and Agreements relating to the natural heritage.
- To manage, maintain and develop State-owned National Parks and Nature Reserves.

Information pertaining to Natura 2000 sites within the Republic of Ireland is typically held by NPWS and is publicly accessible through their on-line database at www.npws.ie . Consultations carried out involved querying the NPWS database for information pertaining to Natura 2000 sites within 15 km of the proposed development.

1.5.1 NBDC Database

The National Biodiversity Database Centre database was queried for records of species of conservation concern present within the immediate vicinity of the proposed development.

2 Screening

Following the guidelines set out by NPWS (2009), Appropriate Assessment Screening (Phase I Appropriate Assessment) is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the EU Habitats Directive. According to the guidelines as laid by NPWS (2009), Appropriate Assessment Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

(1) Is the plan or project directly connected to or necessary for the management of the site?

(2) Is the plan or project, alone or in combination with other such plans or projects likely to have significant negative effects on a Natura 2000 site(s) in view of the conservation objectives of that site(s)?

The proposed development does not comply with the first screening test (i.e., the proposed development is not directly connected to, or necessary for the management of any Natura 2000 site). The screening exercise will therefore inform the Appropriate Assessment process in determining whether the proposed development, alone or in combination with other plans and projects, has any potential to have significant effects on the Natura 2000 sites within the study area. If the effects are deemed to be significant, potentially significant, or uncertain, or it the screening process becomes overly complicated, then applying the Precautionary Principle and in accordance with Article 6(3) of the Habitats Directive, a Stage 2 Appropriate Assessment is required stage, i.e., "*The consideration of the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other projects or plans to the sites structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.*"

2.1 Description of proposed development

Beckett Developments Ltd are applying for Planning Permission for the construction of 8 No. houses comprising of 1 No. 3 bedroom 2 storey detached, Type B1 (c.122 m2) Site 1, 1 No. 4 bedroom 2 storey detached type B2 (c.134 m2) Site 2, 6 No. 4 bedroom 2 storey semidetached Type A1 ((c.148 m2) Sites 3-8 inclusive, all associated on and off site development works ,landscaping ,boundary treatments, removal of existing street boundary screen wall and the provision of vehicular and pedestrian access to Grangebrook Avenue on infill site of circa 0.226 ha., part of the grounds of "Palmyra", Whitechurch Road (Grangebrook Avenue) Rathfarnham, Dublin 16. The approximate location of proposed development site is indicated in Figure 1, Figure 2, Figure 3 and Figure 4. An excerpt from the Architect's drawing of the layout is presented in Figure 5. Detailed drawings of the proposed dwelling are presented in the planning application.

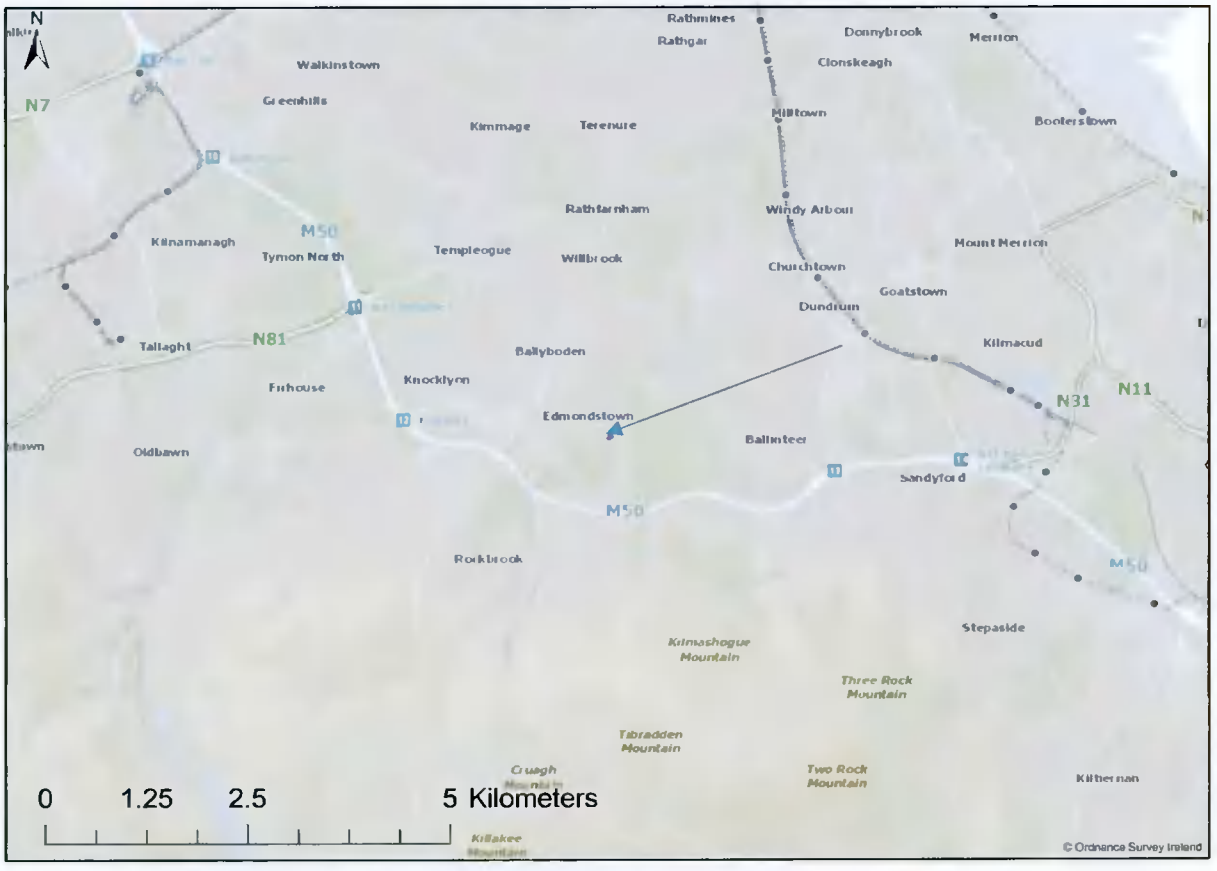

Figure 1: Approximate location of proposed development (1:50,000)

Figure 2: Approximate location of proposed development site (1:25,000)

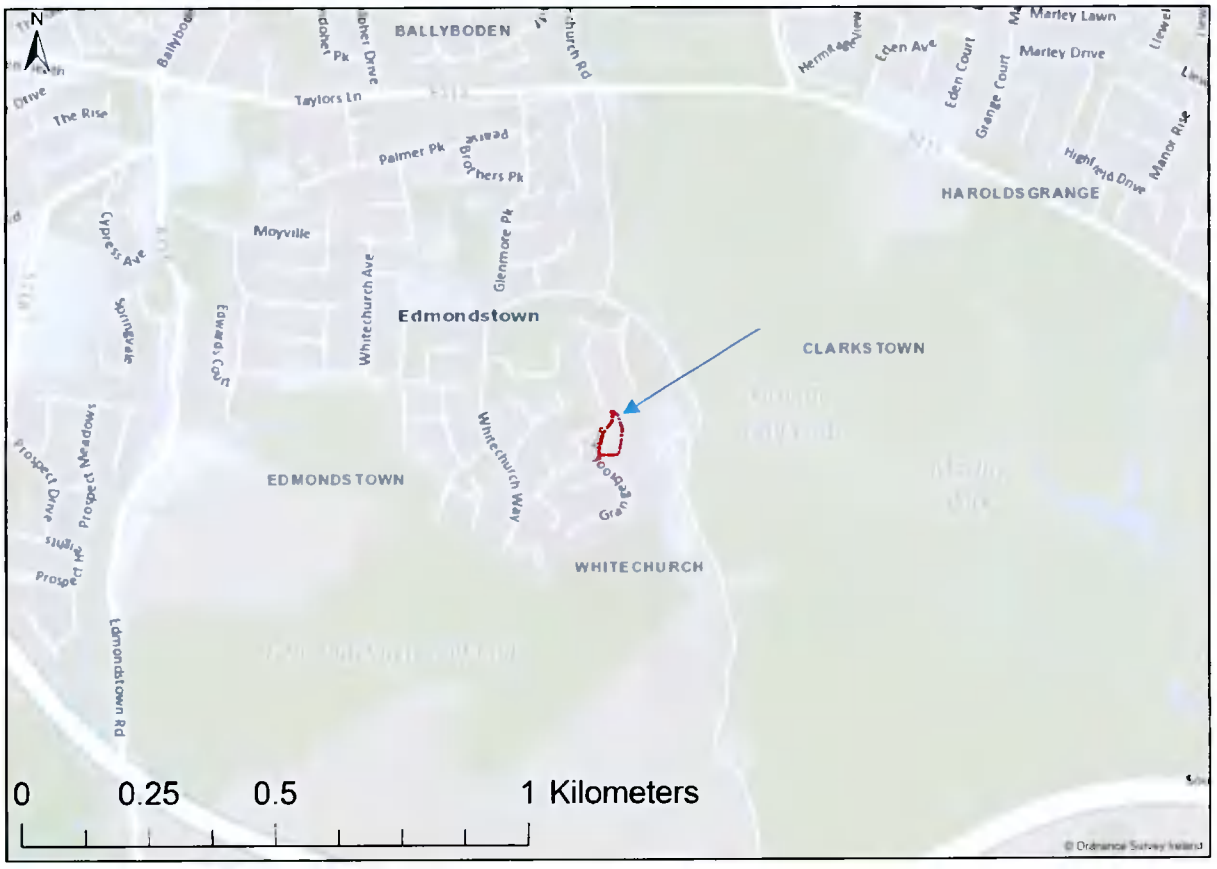

Figure 3: Approximate location of proposed development site (1:8,000)

Figure 4: Approximate location of proposed development site relative to surrounding habitats (1:1,000)

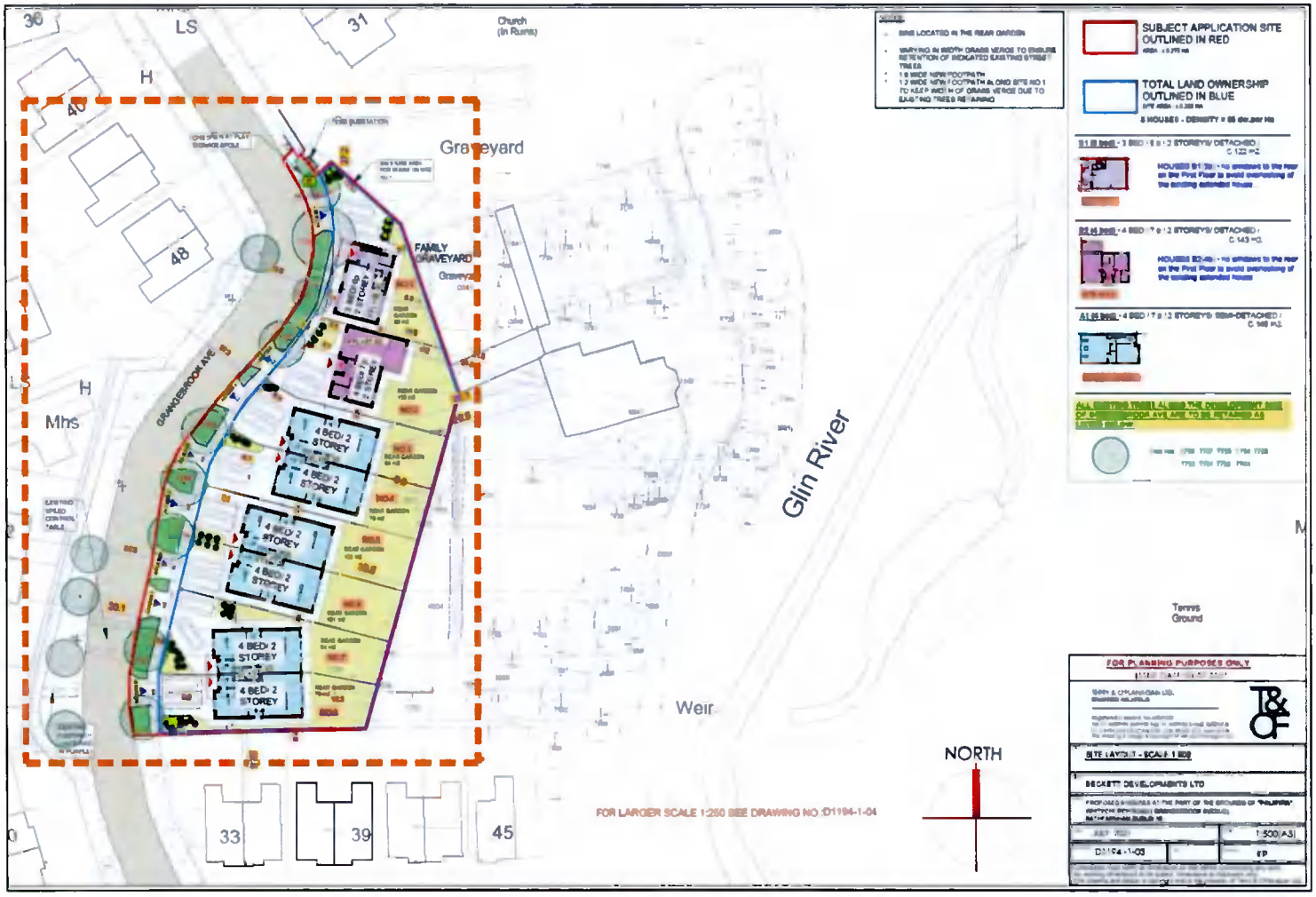

Figure 5: Excerpt from Architect's drawing

2.2 Description of existing conditions on site

Numerous site visits were undertaken in April, May and June of 2021 (see accompanying EcIA for details). The site is located in a relatively built-up area adjacent to Palmyra House and proximate to the Whitechurch stream (see Figure 6). The site consists of a private garden with the majority of habitat present Amenity Grassland/Lawn (GA2) with a hedgerow/treeline at the periphery. The primary building on site has been present since the 1st Edition OSI mapping.

Figure 6: Approximate location of proposed development relative to surrounding habitats

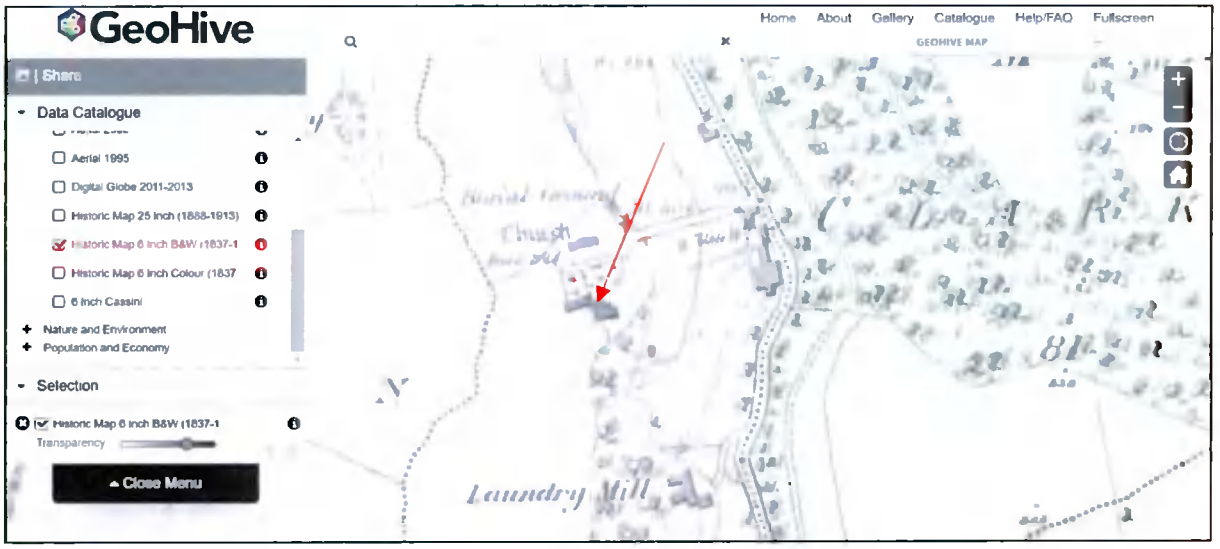

Figure 7: 1st Edition OSI mapping overlain on modern mapping indicating that the primary buildings at Palmyra have been on site for in excess of 100 years

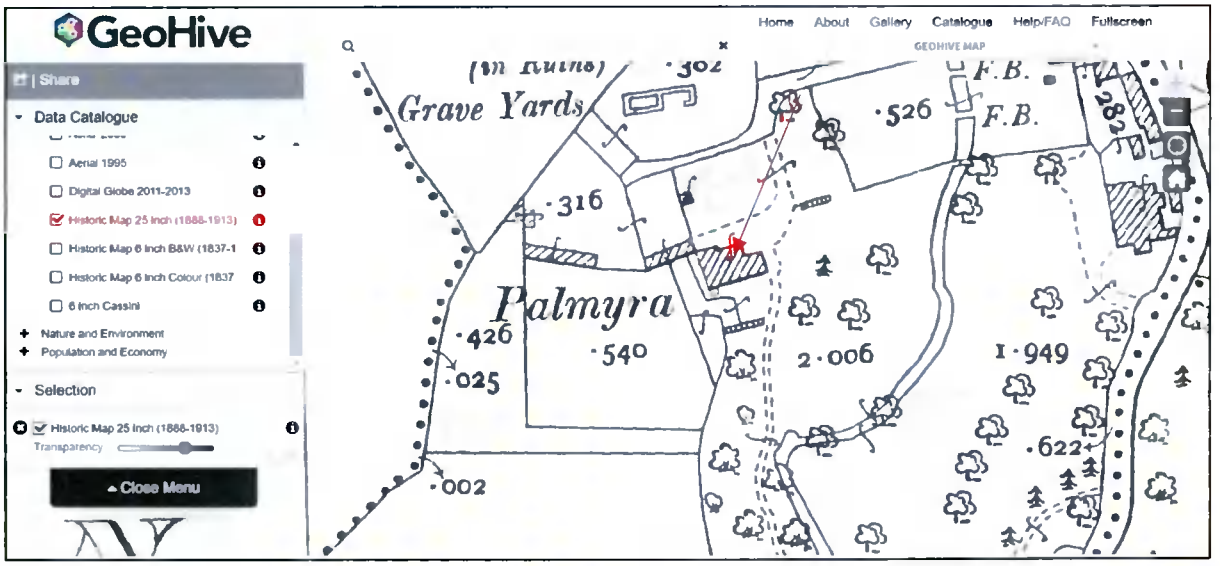

Figure 8: 2nd Edition OSI mapping overlay indicating that the current layout has been in place for over 100 years

While containing numerous ornamental species, the garden does not appear to have been intensively fertilised or reseeded and there is a good variety of species present given the nature of the habitat. There are numerous mature trees associated with the periphery of the site – primarily Beech and Sycamore. Of note is the presence of Spanish Bluebell/Hybrid within and adjacent to the proposed development site. This species is listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 as amended in 2015. Images of the proposed development site and *environs* are provided in Figure 9, Figure 10, Figure 11, Figure 12, Figure 13 and Figure 14. No Annex I Habitats or Annex II species were observed to occur at the site (no indications of either Otter or Kingfisher were observed). Given the habitats present, it was considered likely that bats forage along the Whitechurch stream. A detailed bat survey indicated, however, that the

Whitechurch stream in the vicinity of the proposed development is not a significant foraging/commuting corridor nor was any evidence of roosting bats observed.

Figure 9: Primary habitat present at site – lawn with associated planting

Figure 10: Walled garden forming the northern section of the study area

Figure 11: Mature Beech tree associated with periphery of garden

Figure 12: Aerial image illustrating garden and trees associated with periphery

Figure 13: Palmyra House a portion of the garden of which comprises the proposed development site – this building has been present on site for in excess of 150 years

Figure 14: Whitechurch stream, within 100m of the proposed development site

2.3 Description of scope

The geographical scope of the assessment is to determine if the proposed works/development has the potential to have any significant negative impact on the Natura 2000 sites occurring within 15 km of the proposed development.

The NBDC database was accessed on 28/06/21 to query records occurring within the vicinity (2 km square O12N) in which the proposed development is located (see Figure 15). The species of conservation concern as recorded within this polygon are illustrated in Table 1.

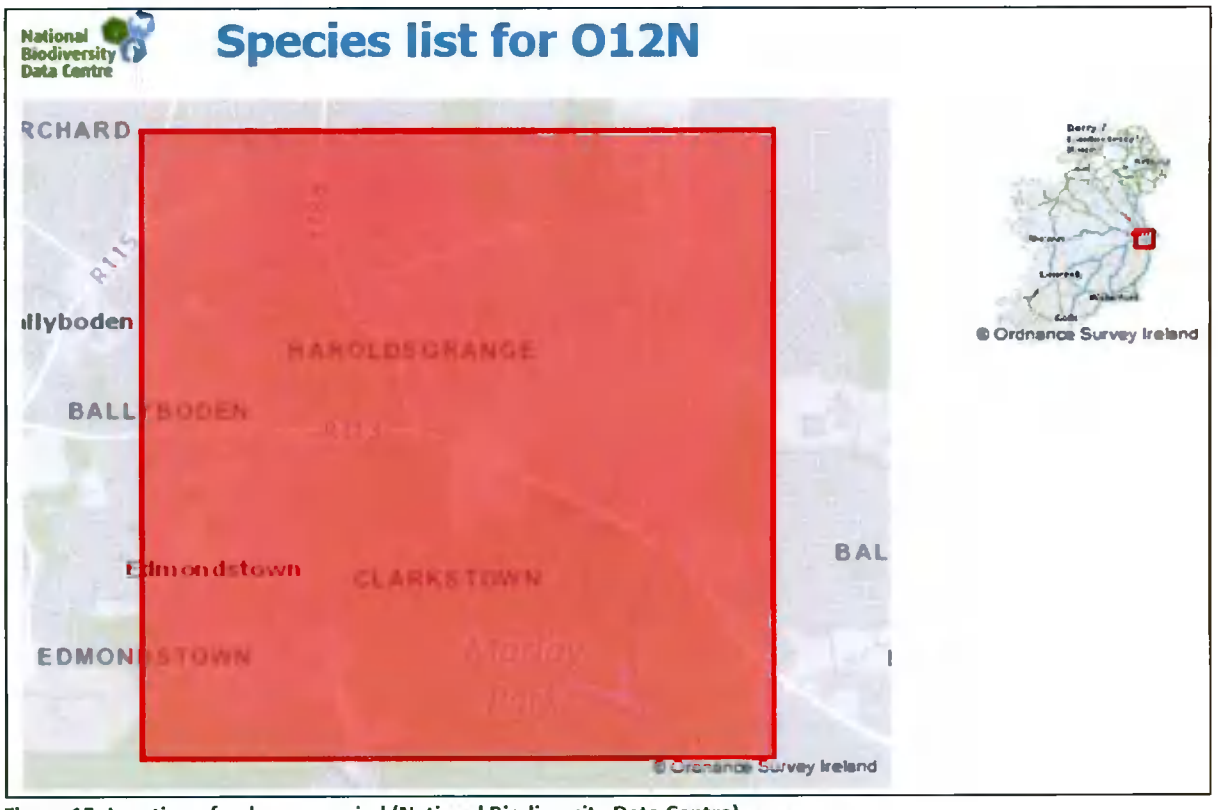

Figure 15: Location of polygon queried (National Biodiversity Data Centre)

Table 1: Species of conservation concern located within 1 km square (O12N)

Scientific Name	Common Name	Date of last record
Hirundo rustica	Barn Swallow	10/04/2015
Larus ridibundus	Black-headed Gull	31/12/2011
Carduelis cannabina	Common Linnet	31/12/2011
Tringa totanus	Common Redshank	31/12/2011
Sturnus vulgaris	Common Starling	31/12/2011
Haematopus ostralegus	Eurasian Oystercatcher	31/12/2011
Larus marinus	Great Black-backed Gull	05/03/2014
Phalacrocorax carbo	Great Cormorant	31/12/2001
Larus argentatus	Herring Gull	01/02/2013
Delichon urbicum	House Martin	31/12/2011
Passer domesticus	House Sparrow	31/12/2011
Larus fuscus	Lesser Black-backed Gull	31/12/2011

Scientific Name	Common Name	Date of last record
Egretta garzetta	Little Egret	05/03/2014
Tachybaptus ruficollis	Little Grebe	31/12/2011
Larus melanocephalus	Mediterranean Gull	31/12/2001
Larus canus	Mew Gull	31/12/2001
Cygnus olor	Mute Swan	31/12/2011
Prunus laurocerasus	Cherry Laurel	08/06/2019
Gunnera tinctoria	Giant-rhubarb	31/03/2014
Fallopia japonica	Japanese Knotweed	19/10/2018
Myotis daubentonii	Daubenton's Bat	01/06/2004
Sciurus carolinensis	Eastern Grey Squirrel	26/05/2018
Meles meles	Eurasian Badger	24/05/2018
Lutra lutra	European Otter	03/03/2012
Nyctalus leisleri	Lesser Noctule	31/10/2014
Pipistrellus pipistrellus sensu lato	Pipistrelle	31/10/2014
Pipistrellus pygmaeus	Soprano Pipistrelle	31/10/2014
Erinaceus europaeus	West European Hedgehog	16/08/2018
Myotis mystacinus	Whiskered Bat	01/06/2004

2.4 Identification of Natura 2000 sites potentially impacted upon by the development

It is general practice, when screening a plan or project for compliance with the Habitats Directive, to identify all Natura 2000 sites within the functional area of the plan/project itself and within 15 km of the boundaries of the area the plan/project applies to (with an appropriate "Zone of Influence" identified from any Source-Pathway-Receptor linkages). This approach is currently recommended in the Department of the Environmental, Heritage and Local Government's document Guidance for Planning Authorities and as a precautionary measure, to ensure that all potentially affected Natura 2000 sites are included in the screening process. The maintenance of habitats and species within individual Natura 2000 sites at favourable conservation condition contributes to the overall maintenance of favourable conservation status of those habitats and species at a national level. It is therefore necessary to identify any potential impacts of the proposed development on the conservation status of Natura 2000 sites. The National Parks and Wildlife Service deem that the favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, is stable or increasing.
- The ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future.
- The conservation status of its typical species is favourable.

The National Parks and Wildlife Service deem that the favourable conservation status of a species is achieved when:

- Population data on the species concerned indicate that it is maintaining itself.
- The natural range of the species is neither being reduced, or likely to be reduced in the foreseeable future.
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

There are 11 Natura 2000 sites in total within 15 km of the proposed development. There are seven SACs (Glenasmole Valley SAC, Wicklow Mountains SAC, Knocksink Wood SAC, Ballyman Glen SAC, Rockabill to Dalkey Island SAC, North Dublin Bay SAC and South Dublin Bay SAC)) and four SPAs (North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, Wicklow Mountains SPA and Dalkey Islands SPA) within 15 km of the proposed development.

Table 2: Natura 2000 sites within 15km of the proposed development

SITE CODE	DESIGNATION	SITE NAME
001209	SAC	Glenasmole Valley
002122	SAC	Wicklow Mountains
000725	SAC	Knocksink Woods
000713	SAC	Ballyman Glen SAC
003000	SAC	Rockabill to Dalkey Islands
000206	SAC	North Dublin Bay SAC
000210	SAC	South Dublin Bay SAC
004006	SPA	North Bull Island
004024	SPA	South Dublin Bay and River Tolka Estuary
004040	SPA	Wicklow Mountains
004172	SPA	Dalkey Islands

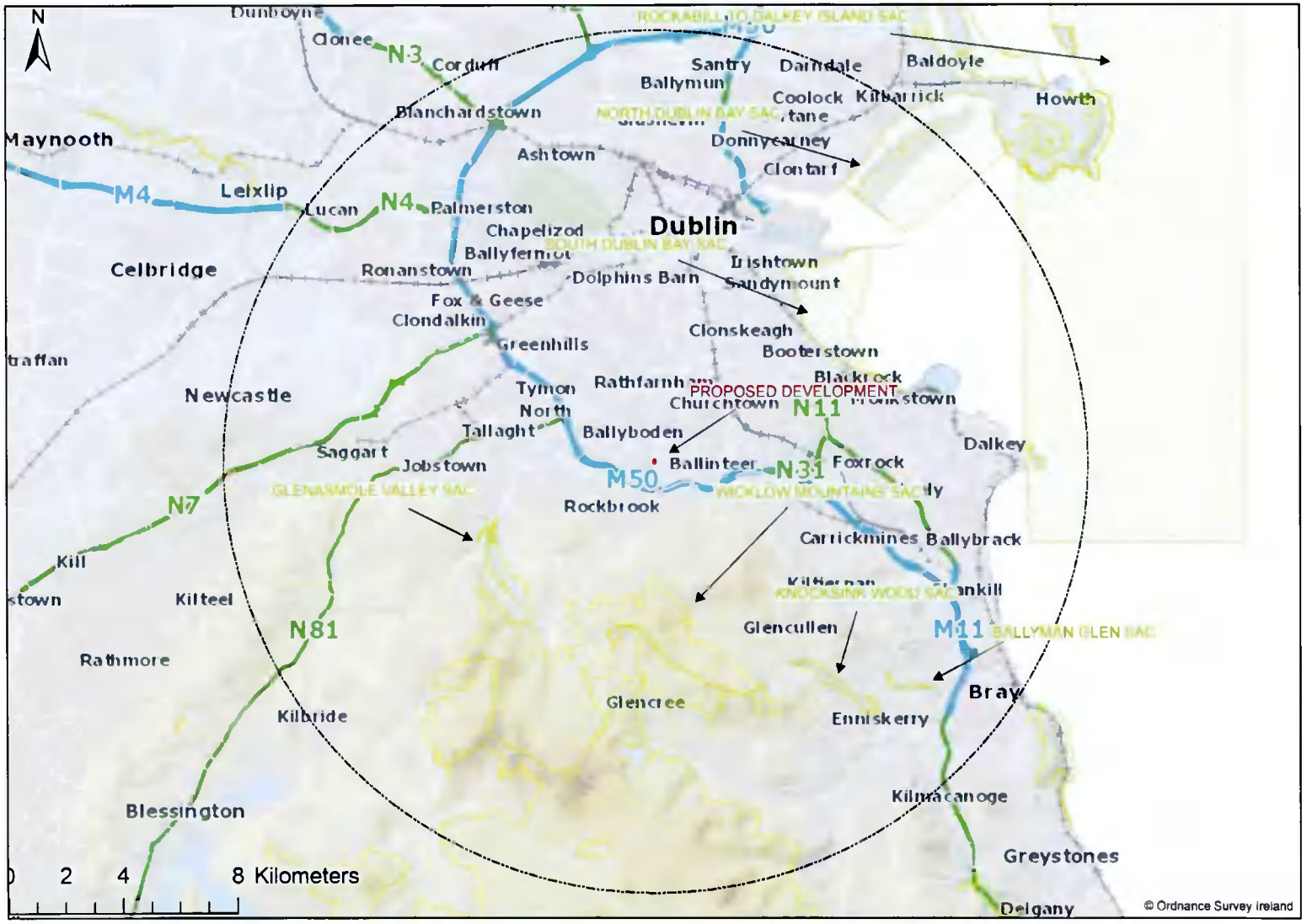

Figure 16: Location of SACs within 15 km of proposed development

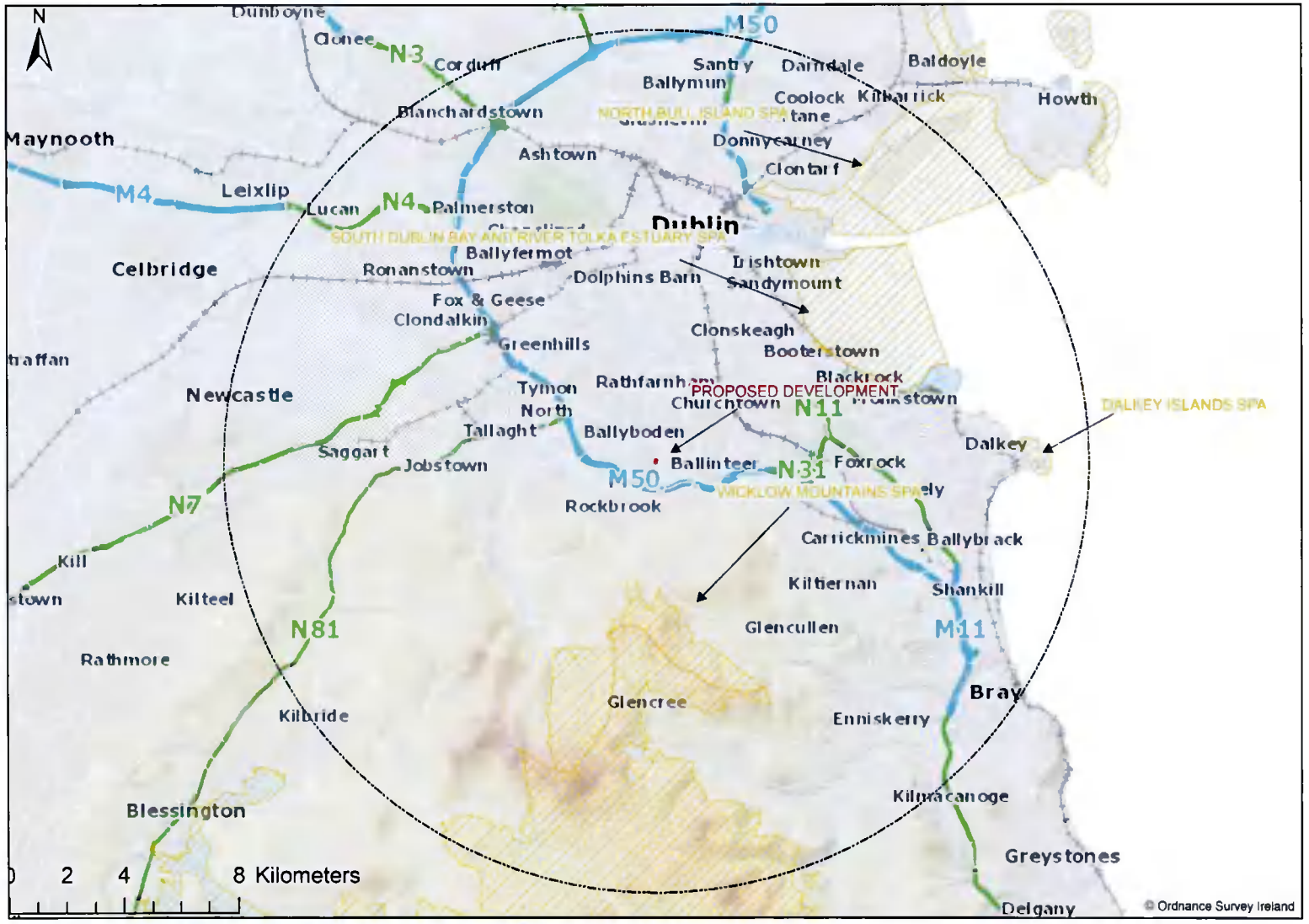

Figure 17: Location of SPAs within 15 km of proposed development

2.5 Summary of Natura 2000 sites potentially impacted upon by the proposed development

There are 11 Natura 2000 sites within 15 km of the proposed development. There are no Natura 2000 sites within the envelope of the proposed project. The Whitechurch stream, however, is within 100m of the proposed development site. Forming part of the five main tributaries of the River Dodder, the 7.7km Whitechurch Stream rises between Tibradden and Kilmashogue Mountains. It flows northerly through Marley Park and St. Enda's Park, onto Willbrook, where it meets the Owendoher River. A summary of the qualifying interests, availability of detailed conservation objectives, general conservation objectives and whether or not there is a potential link between the Natura 2000 site and the River Dodder is presented in Table 3.

Table 3: Summary of Natura 2000 sites potentially impacted upon

SITE CODE	SITE NAME	QUALIFYING INTEREST(S)	DETAILED CONSERVATION OBJECTIVES DOCUMENT	CONSERVATION OBJECTIVES (GENERIC)	POTENTIAL LINKAGE WITH RIVER DODDER
000206	NORTH DUBLIN BAY SAC	[1140], [1210], [1310], [1330], [1395], [1410], [2110], [2120], [2130], [2190]	YES	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	YES
000210	SOUTH DUBLIN BAY SAC	[1140]	YES	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	YES
000713	BALLYMAN GLEN SAC	[7220], [7230]	NO	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	NO
000725	KNOCKSINK WOOD SAC	[7220], [91E0]	NO	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	NO
001209	GLENASMOLE VALLEY SAC	[6210], [6410], [7220]	NO	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected	NO
002122	WICKLOW MOUNTAINS SAC	[1355], [3110], [3130], [3160], [4010], [4030], [4060], [6130], [6230], [7130] (priority if active), [8110], [8210], [8220], 91A0.	YES	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:	NO
003000	ROCKABILL TO DALKEY ISLAND SAC	[1170], [1351]	YES	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:	NO
004006	NORTH BULL ISLAND SPA	A046, A048, A052, A054, A056, A130, A140, A141, A143, A144, A149, A156, A157, A160, A162, A169, A179, A999	YES	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:	YES

SITE CODE	SITE NAME	QUALIFYING INTEREST(S)	DETAILED CONSERVATION OBJECTIVES DOCUMENT	CONSERVATION OBJECTIVES (GENERIC)	POTENTIAL LINKAGE WITH RIVER DODDER
004024	SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA	A046, A130, A137, A141, A143, A144, A149, A157, A162, A179, A192, A193, A194, A999.	YES	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:	YES
004040	WICKLOW MOUNTAINS SPA	A098, A103	YES	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:	NO
004172	DALKEY ISLANDS SPA	A192, A193, A194	NO	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:	NO

2.6 Identification and evaluation of likely significant effect

2.6.1 Description of source-pathway-receptor linkages and identification of "Zone of Influence"

The basis for identifying potential impacts/significance thereof and defining the zone of influence is the "Source-Pathway-Receptor" (S-P-R) model. This model underpins all water-protection schemes in Ireland, as well as the EU Water Framework Directive on which both surface water and groundwater regulations are based. When examining S-P-R relationships in regard to impacts on Natura 2000 sites, the main questions to be considered are:

1) Source characterisation – Identification of potential source(s) of the impact(s);
2) Pathways analysis – Identification of means through which potential impacts could take place, for example is there a hydrogeological or hydrological link that can deliver a pollutant source to a nearby receptor; and
3) Receptor identification – identification of Natura 2000 sites/qualifying interests potentially affected.

The Whitechurch stream is located within 100m of the proposed development. Whitechurch stream is a tributary of the Dodder, which is a tributary of the Liffey, eventually discharging to the Irish Sea. There are numerous Natura 2000 sites in the vicinity of the mouth of the river Liffey. The conservation objectives of the qualifying interests of these sites are directly or indirectly dependent on water quality. The sources of impact most likely to impact on these Natura 2000 sites concern impacts on water quality.

In addition, the proposed development site is located within the Ringsend Agglomeration and will be serviced as regards public foul sewer by the Ringsend Waste Water Treatment Plant. The most recent available Annual Environmental Report[1] for the Ringsend facility indicates that the plant is not compliant with Emission Limit Values. Any additional load has the potential to exacerbate this non-compliance.

[1] https://www.water.ie/__uuid/0d428748-b44d-4747-994b-7509e13dac7c/D0034-01_2019_AER.pdf

Figure 18: **Excerpt from EPA database indicating that the proposed development is located within the Ringsend Agglomeration**

The key questions to be considered are:

1) Is there any source(s) of impact(s) on water quality associated with the proposed development?
2) Is there a pathway present between the source of impact and a Natura 2000 site; and
3) What are the Natura 2000 sites/qualifying interests potentially impacted upon?

2.6.2 Sources of potential impacts

Sources of potential impacts are:

- Impacts associated with contamination of surface and/or ground water during construction;
- Impacts associated with contamination of surface and/or ground water during operation; and
- In addition to the primary concern as regards impacts on water, there is a potential for impacts associated with the spread of propagules of Alien Invasive Plant Species.

2.6.3 Presence of pathway and receptor

The primary receptor of concern during construction is the Whitechurch stream, the water from which eventually discharges to the Irish Sea at Dublin Bay. There is, therefore, the presence of a pathway and receptor during the construction phase of the proposed development with a suite of Natura 2000 sites located in Dublin Bay. The development is serviced by the Ringsend Waste Water Treatment Plant, which has failed recently to comply with Emission Limit Values as it is operating well over-

capacity. There is, therefore, a source-pathway-receptor linkage during the operational phase between the proposed development and the suite of Natura 2000 sites occurring within Dublin Bay.

2.6.4 Natura 2000 site(s) with potential to be impacted upon and Zone of Influence

There is potential for negative impacts during both the construction phase and operational phase on the suite of Natura 2000 sites associated with Dublin Bay. In accordance with the Precautionary Principle, the "Zone of Influence" should include these Natura 2000 sites:

- North Dublin Bay SAC;
- South Dublin Bay SAC;
- North Bull Island SPA; and
- South Dublin Bay and River Tolka Estuary SPA.

There is no direct Source-Pathway-Receptor linkage between the proposed development site and remaining Natura 2000 sites within the 15km buffer.

2.6.5 Sources of potential Direct, Indirect or Secondary Impacts

2.6.5.1 Direct Impacts

No habitat for which any Natura 2000 site are designated will be lost through land-take, etc. There is, therefore, no direct impact associated with the proposed development.

2.6.5.2 Indirect Impacts

The proposed development is within 100m of the Whitechurch Stream, water from which eventually discharges to the Irish Sea at Dublin Bay. There is potential for indirect impacts on the suite of Natura 2000 sites in the vicinity of Dublin Bay associated with any impact on water quality of the Whitechurch stream associated with construction.

The proposed development is within the Ringsend Agglomeration, which is operating over capacity. Any further loading of this WWTP has the potential to impact on water quality in the vicinity.

2.6.5.3 Secondary and or Residual Impacts

Given the mobility of Qualifying Interests of SPAs and the dependence of Qualifying Interests of SPAs on Qualifying Habitats of SACs there is potential for secondary/residual impacts. There is a potential for secondary and/or residual impacts on the Conservation Objectives of Qualifying interests of Natura 2000 sites impacted upon by any changes in water quality.

A summary of the potential for impacts upon Natura 2000 sites within the zone of influence of the proposed development is summarized in Table 4. The potential for impacts upon the Natura 2000 sites identified in the event of negative impacts is summarized in Table 5. The potential impacts on the qualifying interests of identified Natura 2000 sites are summarized in Table 6.

Table 4: Summary of the potential for impacts upon Natura 2000 sites.

Site Name	Direct Impacts	Indirect/ Secondary Impacts	Resource requirements (water abstraction etc.)	Emissions (to land, water or air)	Excavation requirements	Duration of construction, operation and decommissioning
NORTH DUBLIN BAY SAC	None foreseen	Potential	None foreseen	Potential	Potential	Potential
SOUTH DUBLIN BAY SAC	None foreseen	Potential	None foreseen	Potential	Potential	Potential
BALLYMAN GLEN SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
KNOCKSINK WOOD SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
GLENASMOLE VALLEY SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
WICKLOW MOUNTAINS SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
ROCKABILL TO DALKEY ISLAND SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
NORTH BULL ISLAND SPA	None foreseen	Potential	None foreseen	Potential	Potential	Potential
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA	None foreseen	Potential	None foreseen	Potential	Potential	Potential
WICKLOW MOUNTAINS SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
DALKEY ISLANDS SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen

Table 5: Summary of the potential for changes to Natura 2000 sites.

Site Name	Reduction of habitat area	Disturbance to key species	Habitat/species fragmentation	Reduction in species density	Changes in Key Indicators of Conservation Value	Climate change
NORTH DUBLIN BAY SAC	Potential	Potential	Potential	Potential	Potential	Potential
SOUTH DUBLIN BAY SAC	Potential	Potential	Potential	Potential	Potential	Potential
BALLYMAN GLEN SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
KNOCKSINK WOOD SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
GLENASMOLE VALLEY SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
WICKLOW MOUNTAINS SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
ROCKABILL TO DALKEY ISLAND SAC	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
NORTH BULL ISLAND SPA	Potential	Potential	Potential	Potential	Potential	Potential
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA	Potential	Potential	Potential	Potential	Potential	Potential
WICKLOW MOUNTAINS SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen
DALKEY ISLANDS SPA	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen	None foreseen

Table 6: Summary of potential impacts on Qualifying Interests of Natura 2000 sites identified as at risk of impact

Site name	Qualifying Interest	Potential Impact
North Dublin Bay SAC	1140 Mudflats and sandflats not covered by seawater at low tide	Potential indirect secondary/residual impacts
	1210 Annual vegetation of drift lines	Potential indirect secondary/residual impacts
	1310 *Salicornia* and other annuals colonising mud and sand	Potential indirect secondary/residual impacts
	1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Potential indirect secondary/residual impacts
	1395 Petalwort *Petalophyllum ralfsii*	None foreseen
	1410 Mediterranean salt meadows (*Juncetalia maritimi*)	Potential indirect secondary/residual impacts
	2110 Embryonic shifting dunes	None foreseen
	2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)	None foreseen
	2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)[priority habitat]	None foreseen
	2190 Humid dune slacks	None foreseen
South Dublin Bay SAC	1140 Mudflats and Sandflats not covered by water at low tide	Potential indirect secondary/residual impacts
North Bull Island SPA	Light-bellied Brent Goose (Branta bernicla hrota) [A046]	Potential secondary/residual impacts
	Shelduck (Tadorna tadorna) [A048]	Potential secondary/residual impacts
	Teal (Anas crecca) [A052]	None foreseen
	Pintail (Anas acuta) [A054]	Potential secondary/residual impacts
	Shoveler (Anas clypeata) [A056]	None foreseen
	Oystercatcher (Haematopus ostralegus) [A130]	Potential secondary/residual impacts
	Golden Plover (Pluvialis apricaria) [A140]	Potential secondary/residual impacts
	Grey Plover (Pluvialis squatarola) [A141]	Potential secondary/residual impacts
	Knot (Calidris canutus) [A143]	Potential secondary/residual impacts
	Sanderling (Calidris alba) [A144]	None foreseen
	Dunlin (Calidris alpina) [A149]	Potential secondary/residual impacts
	Black-tailed Godwit (Limosa limosa) [A156]	Potential secondary/residual impacts
	Bar-tailed Godwit (Limosa lapponica) [A157]	Potential secondary/residual impacts
	Curlew (Numenius arquata) [A160]	None foreseen
	Redshank (Tringa totanus) [A162]	Potential secondary/residual impacts
	Turnstone (Arenaria interpres) [A169]	None foreseen
	Black-headed Gull (Chroicocephalus ridibundus) [A179]	None foreseen
	Wetland and Waterbirds [A999]	Potential secondary/residual impacts
South Dublin Bay and River Tolka Estuary SPA	Light-bellied Brent Goose (Branta bernicla hrota) [A046]	Potential secondary/residual impacts
	Oystercatcher (Haematopus ostralegus) [A130]	Potential secondary/residual impacts
	Ringed Plover (Charadrius hiaticula) [A137]	None foreseen

Site name	Qualifying Interest	Potential Impact
	Grey Plover (Pluvialis squatarola) [A141]	Potential secondary/residual impacts
	Knot (Calidris canutus) [A143]	Potential secondary/residual impacts
	Sanderling (Calidris alba) [A144]	None foreseen
	Dunlin (Calidris alpina) [A149]	Potential secondary/residual impacts
	Bar-tailed Godwit (Limosa lapponica) [A157]	Potential secondary/residual impacts
	Redshank (Tringa totanus) [A162]	Potential secondary/residual impacts
	Black-headed Gull (Chroicocephalus ridibundus) [A179]	None foreseen
	Roseate Tern (Sterna dougallii) [A192]	None foreseen
	Common Tern (Sterna hirundo) [A193]	None foreseen
	Arctic Tern (Sterna paradisaea) [A194]	None foreseen
	Wetland and Waterbirds [A999]	Potential secondary/residual impacts

2.6.6 Potential cumulative impacts in association with other plans

Article 6(3) of the Habitats Directive requires an assessment of a plan/project to consider other plans/projects that might, in combination with the proposed plan/project, have the potential to adversely impact upon Natura 2000 sites.

Table 7: Potential cumulative impacts.

Plan	Purpose	Cumulative impact
EU Water framework Directive	Maintain and enhance water quality within the EU	None predicted
EU Freshwater Fish Directive	Protect freshwater bodies within the EU suitable for sustaining fish populations	None predicted
EU Groundwater Directive	Maintain and enhance the quality of groundwater within the EU	None predicted
EU Floods Directive	The Floods Directive applies to river basins and coastal areas at risk of flooding	None predicted
Nitrates Directive	Reducing water pollution within the EU	None predicted
Urban Waste-water treatment Directive	Protecting the environment from adverse impacts of waste-water discharge	None predicted
Sewage Sludge Directive	Regulate the use of sewage sludge	None predicted
The IPPC Directive	To achieve a high level of environmental protection	None predicted
National Development Plan	To promote more balanced spatial and economic development	None predicted
National Spatial Strategy	To achieve a better balance of social, economic and physical development across Ireland	None predicted
Eastern CRFAM	Long-term planning for reducing and managing flood risk	Potential in combination impacts on water quality in absence of mitigation measures.
SDCC Development Plans	Sustainable development of SDCC	None predicted
Local Area Development Plans	Various	None predicted
Quarrying activities, water abstraction, discharge, etc	Various	Potential in-combination impacts on water quality in absence of mitigation measures
Current and future planning permissions –	Various	An Appropriate Assessment Screening exercise of any planning permission would be undertaken.
SDCC Part 8's	Various	An Appropriate Assessment Screening exercise of any Part 8 would be undertaken
Land spreading of organic waste by farmers in the locality	Fertilising land, disposing of organic waste	Potential in-combination impacts on water quality in absence of mitigation measures

The primary source of any cumulative impacts concerns impacts on ground and/or surface water during construction and/or operation.

A review of numerous on-line resources of the vicinity of the proposed development was undertaken as regards to potential cumulative impacts.

2.6.6.1 EIA Portal

The "EIA Portal" online resource was queried on the 5th of July 2021. It can be seen from Figure 19 that there is a significant registered development requiring EIA in the immediate vicinity.

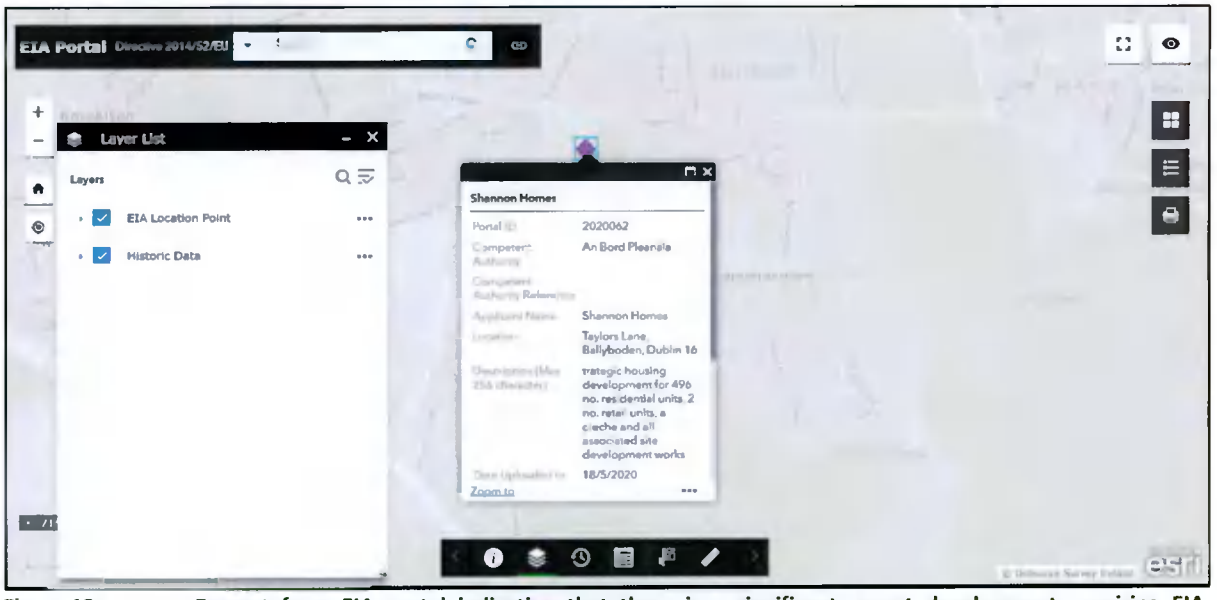

Figure 19: **Excerpt from EIA portal indicating that there is a significant recent development requiring EIA registered in the database within the immediate vicinity of the proposed development**

2.6.6.2 EPA database

A query of the EPA mapping database indicates that there are no Emissions Points associated with IEL, etc. located in the immediate vicinity of the proposed development.

Figure 20: Excerpt from EPA mapping database

2.6.6.3 SDCC planning

A query of the South Dublin Co. Council online planning resource indicates that there have been numerous planning permission applications in the general vicinity, including several developments on the eastern side of the Whitechurch Stream.

Figure 21: Excerpt of map from SDCC online planning map

2.6.7 "Do nothing" scenario

Any potential impacts associated with the proposed development would be avoided.

2.6.8 Gauging of Impacts on Natura 2000 sites – Integrity of site checklist

The potential impacts of the proposed development on Natura 2000 sites are gauged using a checklist, which aids in determining the potential of development to have a significant impact on any Natura 2000 site. This checklist consists of a number of pertinent questions as set out in Table 8.

Table 8: Potential of the proposed development to impact on Natura 2000 sites in the absence of suitable mitigation/preventative measures

Does the Plan have the potential to:	Yes/No
Cause delays in progress towards achieving the conservation objectives of the Natura 2000 site?	YES
Interrupt progress toward achieving the conservation objectives of the Natura 2000 site?	YES
Disrupt those factors helping to maintain the favourable conditions at the Natura 2000 site?	YES
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the Natura 2000 site?	YES
Cause changes to the vital defining aspects (e.g., nutrient balance) that determine how the Natura 2000 site functions as a habitat or ecosystem?	YES
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the Natura 2000 site?	YES
Interfere with predicted or expected natural changes to the Natura 2000 site (such as water dynamics or chemical composition)?	YES
Reduce the area of key habitats within the Natura 2000 site?	YES
Reduce the population of key species of the Natura 2000 site?	YES
Alter the balance between key species of the Natura 2000 site?	YES
Reduce the biodiversity of the Natura 2000 site?	YES
Result in disturbance that could affect population size or density or the balance between key species within the Natura 2000 site?	YES
Result in fragmentation?	YES
Result in the loss or reduction of key features of Natura 2000 sites?	YES

2.7 Conclusions of screening

According to the guidance published by the NPWS (DoEHLG, 2009), Screening for Appropriate Assessment can either identify that a Natura Impact Statement (NIS) is not required where:

(1) A project/proposal is directly related to the management of the site; or

(2) There is no potential for significant impacts affecting the Natura 2000 network

Where the screening process identifies that significant impacts are certain, likely or uncertain the project must either proceed to Stage II Appropriate Assessment or be rejected.

The potential impacts that will arise from the proposed development have been examined in the context of a number of factors that could potentially impact upon the integrity of the Natura 2000 network. On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the development:

(1) Is not directly connected with or necessary to the management of a Natura 2000 site and

(2) May have significant impacts on one or more Natura 2000 sites.

Following an examination, analysis and evaluation of the relevant information and the potential for significant effects on the conservation objectives of Natura 2000 sites, and applying the Precautionary Principle, it is not possible to exclude (on the basis of objective information and in the absence of specific prescribed precautionary/mitigation measures) that the proposed development individually or in combination with other plans or projects, has the potential to have significant negative impacts on the following Natura 2000 sites:

- North Dublin Bay SAC;
- South Dublin Bay SAC:
- North Bull Island SPA; and
- South Dublin Bay and River Tolka Estuary SPA.

Screening having identified potential impacts of the proposed development upon these Natura 2000 sites and in accordance with Article 6(3) of the Habitats Directive, a Stage 2 Appropriate Assessment is required, i.e., *"The consideration of the impact of the project or plan on the integrity of the Natura 2000 Site, either alone or in combination with other projects or plans to the sites structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts."*

3 Appropriate Assessment

The potential for significant negative impacts of the proposed development on the ecological integrity of the following Natura 2000 sites in light of the conservation objectives of these sites, is examined in this section:

- North Dublin Bay SAC;
- South Dublin Bay SAC;
- North Bull Island SPA; and
- South Dublin Bay and River Tolka Estuary SPA.

3.1 Stage 2 Appropriate Assessment background

Screening having identified potential impacts Stage 2 Appropriate Assessment is carried out to determine if the plan/project will have any significant negative impacts on the integrity of the Natura 2000 site(s) identified as being at risk. For the purposes of Appropriate Assessment, a significant effect is any effect that may affect the Conservation Objectives of the Qualifying Interest for which a site was designated but excluding inconsequential effects. If the effect is not relevant to the conservation objective, then it cannot be a significant effect for the purposes of Appropriate Assessment. A likely significant effect, for the purpose of Appropriate Assessment must be:

(a) Significant;

(b) Relevant to the conservation objective for that site; and

(c) The possibility of effects cannot be reasonably excluded.

This stage of the Appropriate Assessment process includes:

1) Impact Prediction - the potential impact of the proposed development on the ecological integrity of Natura 2000 sites in terms of the conservation objectives of those sites is assessed; and
2) Mitigation Measures – mitigation/preventative measures are identified (either in place or to be implemented) in relation to any significant negative impacts associated with the proposed development on the Natura 2000 sites as described herein.

This stage of the Appropriate Assessment process involves the identification of potentially impacted sites, the identification of the qualifying interests of those sites, and an assessment of the significance

of impacts on the conservation objectives of those sites. Any negative impacts on the integrity of structure, function or conservation objectives of these sites will require the implementation of avoidance or mitigation measures to avoid progression to Stages 3 and 4 of the Appropriate Assessment process.

3.2 Summary of Natura 2000 sites relevant to the Stage Two Appropriate Assessment

3.2.1 North Dublin Bay SAC site code 000206(Site Synopsis Version 12/08/13, Natura 2000 Data Form Updated 12/15, Conservation Objectives Document Version 1)

There is a conservation objectives document for this site (www.npws.ie) from which the following is sourced, in addition to site synopses and Natura 2000 data form.

3.2.1.1 General Description

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 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the island is predominantly glacial in origin and siliceous in nature. Between the island and the mainland there occurs two sheltered intertidal areas which are separated by a solid causeway constructed in 1964. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site. The interior of the island is excluded from the site as it has been converted to golf courses. The proximity of the North Bull Island to Dublin City results in it being a very popular recreational area. It is also very important for educational and research purposes. Nature conservation is a main land-use within the site. Site possesses an excellent diversity of coastal habitats. The North Bull Island dune system is one of the most important systems on the east coast and is one of the few in Ireland that is actively accreting. It possesses extensive and mostly good quality examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Both Atlantic and Mediterranean salt marshes are well represented and a particularly good marsh zonation is shown. The salt marshes grade into mudflats and sandflats, some of which are dominated by annual *Salicornia* species. *Petalophyllum ralfsii* occurs at its only known station away from the western seaboard. The site has five Red Data Book vascular plant species and four Red Data Book bryophyte species. This is one of the most important sites for wintering waterfowl in Ireland, with internationally important populations of *Branta bernicla horta*, *Calidris canutus* and *Limosa lapponica*, plus nationally

important numbers of a further 14 species. 20% of the national total of *Pluvialis squatarola* occurs here. Formerly it had important colony of *Sterna albifrons*. North Dublin Bay is nationally important for three insect species. The scientific interests of the site have been well documented and future prospects are good owing to the various designations assigned to site.

3.2.1.2 Qualifying Interests

The Qualifying Interests (QI) of this SAC as per the detailed conservation objectives document are presented in Table 9.

Table 9

000206	North Dublin Bay SAC
1140	Mudflats and sandflats not covered by seawater at low tide
1210	Annual vegetation of drift lines
1310	*Salicornia* and other annuals colonising mud and sand
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
1395	Petalwort *Petalophyllum ralfsii*
1410	Mediterranean salt meadows (Juncetalia maritimi)
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)*
2190	Humid dune slacks

3.2.1.3 Threats, pressures and activities with negative impacts on site

Details as to the threats, pressures and activities with negative impacts on the site are identified from the Natura 2000 data form for the site and are detailed in Table 10.

Table 10

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
L	F02.03		i
H	E02		o
M	A04		i
L	G05.05		i
M	I01		i
M	J01.01		i
H	E01		o
H	K03.06		i
M	F02.03.01		i
M	G02.01		o
M	H01.09		i
M	H01.03		i
H	G01.02		i
H	E03		i
M	G01.01		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	A04		i

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

3.2.1.4 Conservation Objectives

There is a detailed conservation objectives document available for this site, excerpts from which are presented in Table 11, Table 12, Table 13, Table 14, Table 15, Table 16, Table 17, Table 18, Table 19 and Table 20.

Table 11

Conservation Objectives for : North Dublin Bay SAC [000206]

1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated using OSi data as 578ha
Community extent	Hectares	Maintain the extent of the *Mytilus edulis*-dominated community, subject to natural processes. See map 4	Estimated during site walkover in March 2012. See marine supporting document for further information
Community structure: *Mytilus edulis* density	Individuals/m²	Conserve the high quality of the *Mytilus edulis*-dominated community, subject to natural processes	Observed during site walkover in March 2012. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Fine sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex; Fine sand with *Spio martinensis* community complex. See map 4	Based on an intertidal survey undertaken in 2010 (ASU, 2011). See marine supporting document for further information

Table 12

Conservation Objectives for : North Dublin Bay SAC [000206]

1210 Annual vegetation of drift lines

To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area increasing, subject to natural processes, including erosion and succession. Total area mapped: South Bull - 0.11ha. See map 6	Based on data from the Sand Dune Monitoring Project (SDM) (Delaney et al., 2013). Habitat is very difficult to measure in view of its dynamic nature, which means that it can appear and disappear within a site from year to year. This habitat was recorded from both North Bull and South Bull sub-sites by the Coastal Monitoring Project (CMP) (Ryle et al., 2009) but was only recorded in South Bull by the SDM. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 6	Based on data from Delaney et al., (2013). Strandline is more extensive at South Bull sub-site than at North Bull. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Accumulation of organic matter in tidal litter is essential for trapping sand and initiating dune formation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al., (2013). As well as the transitions between sand dune habitats, the transitions from sand dune to saltmarsh communities at Bull Island are of significant value. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sea rocket (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and oraches (*Atriplex* spp.)	Based on data from Delaney et al., (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. See coastal habitats supporting document for further details

Table 13

Conservation Objectives for : North Dublin Bay SAC [000206]

1310 *Salicornia* and other annuals colonising mud and sand

To restore the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 29.10ha. See map 5	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Habitat surveyed and mapped at a single sub-site, giving a total estimated area of 29.10ha, including mosaics. NB some further small unsurveyed areas may be present within this site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 5 for known distribution	Based on data from McCorry (2007). *Salicornia* is an annual species, so its distribution can vary significantly from year to year. The largest area of *Salicornia* flats occurs north of the central causeway. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain, or where necessary restore, natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). Sediment supply is particularly important for this pioneer saltmarsh community, as its distribution depends on accretion rates. It appears that the extent of the *Salicornia* flats was much lower before the construction of the causeway. See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). Creeks deliver sediment throughout the saltmarsh system. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Based on data from McCorry (2007). This pioneer saltmarsh community requires regular tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Bull Island there are transitional communities between the *Salicornia* flats, Atlantic salt meadows and Mediterranean salt meadows. These saltmarsh habitats also form transitional communities with a range of sand dune habitats. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry (2007). Wildfowl and water birds graze and forage on the *Salicornia* flats at Bull Island. See coastal habitats supporting document for details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for details
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	Based on data from McCorry (2007). *Spartina* is frequent at Bull Island. While it occurs within a mosaic with *Salicornia* flats, it generally does not dominate the vegetation cover and only forms small swards. See coastal habitats supporting document for further details

Table 14

Conservation Objectives for : North Dublin Bay SAC [000206]

1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

To maintain the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 81.84ha. See map 5	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Atlantic salt meadow (ASM) surveyed and mapped at a single site, giving an estimated area of 81.84ha, including mosaics. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 5 for known distribution	Based on data from McCorry (2007). The ASM at Bull Island was the largest single section of saltmarsh surveyed by the SMP in 2006. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). The construction of the causeway had a significant impact on the saltmarsh at Bull Island. Within the ASM there is some erosion at a slow rate at the seaward side of the northern tip. This erosion is offset by accretion along the northside of the causeway. See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). Within Bull Island, the ASM topography is well developed and there is a very complex creek and salt pan structure. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Bull Island there are transitional communities between the *Salicornia* flats, Atlantic salt meadows and Mediterranean salt meadows. These saltmarsh habitats also form transitional communities with a range of sand dune habitats. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry (2007).There is some light grazing by hares (*Lepus timidus hibernicus*) and wildfowl. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	Based on data from from McCorry (2007). *Spartina* is widely distributed on ASM though found at low cover values. See coastal habitats supporting document for further details

Table 15

Conservation Objectives for : North Dublin Bay SAC [000206]

1410 Mediterranean salt meadows (Juncetalia maritimi)

To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island - 7.98ha. See map 5	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry, 2007). One sub-site that supports Mediterranean Salt Meadow (MSM) was surveyed and mapped, giving an estimated area of 7.98ha, including mosaics. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 5 for known distribution	Based on data from McCorry (2007). The MSM is restricted to the area north of the causeway along the boundary with dune habitats and of St Annes Golf Course; the extent of the habitat here is likely to have been greater in the past. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). The MSM at North Bull Island not as well developed as the ASM. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	MSM is found high up in the saltmarsh but requires occasional tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). At Bull Island there are transitional communities between the *Salicornia* flats, Atlantic salt meadows and Mediterranean salt meadows. These saltmarsh habitats also form transitional communities with a range of sand dune habitats. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation in the sward	Based on data from McCorry (2007). There is some light grazing by hares (*Lepus timidus hibernicus*) and wildfowl. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with characteristic species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	Based on data from McCorry (2007). *Spartina* is widely distributed at this site. See coastal habitats supporting document for further details

Table 16

Conservation Objectives for : North Dublin Bay SAC [000206]

2110 Embryonic shifting dunes

To restore the favourable conservation condition of Embryonic shifting dunes in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull - 2.64ha; South Bull - 3.43ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Embryo dunes were surveyed and mapped at two sub-sites, giving a total estimated area of 6.07ha. Habitat is very difficult to measure in view of its dynamic nature and is more extensive on North Bull than South Bull. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Delaney et al. (2013). Mechanical beach cleaning may be contributing to limited distribution of this habitat, particularly at South Bull. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Dunes are naturally dynamic systems that require continuous supply and circulation of sand. At North Bull, movement of sediment towards the recurved northern tip of the dune has resulted in the formation of a wide area of foredune habitat. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al. (2013). As well as the transitions between sand dune habitats, the transitions from sand dune to saltmarsh communities at Bull Island are of significant value. See coastal habitats supporting document for further details
Vegetation composition: plant health of foredune grasses	Percentage cover	More than 95% of sand couch (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch (*Elytrigia juncea*) and/or lyme-grass (*Leymus arenarius*)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-native species) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (*Hippophae rhamnoides*) should be absent or effectively controlled. See coastal habitats supporting document for further details

Table 17

Conservation Objectives for : North Dublin Bay SAC [000206]

2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)

To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. North Bull - 2.20ha; South Bull - 0.97ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). These dunes were surveyed and mapped at two sub-sites, giving a total estimated area of 3.18ha. Habitat is very difficult to measure in view of its dynamic nature. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on Delaney et al. (2013). At South Bull and North Bull this habitat forms a continuous strip at or near the seaward edge of the dunes. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Marram grass (*Ammophila arenaria*) reproduces vegetatively and requires constant accretion of fresh sand to maintain active growth encouraging further accretion. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008) and Delaney et al. (2013). As well as the transitions between sand dune habitats, the transitions from sand dune to saltmarsh communities at Bull Island are of significant value. See coastal habitats supporting document for further details
Vegetation composition: plant health of dune grasses	Percentage cover	95% of marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*) should be healthy (i.e. green plant parts above ground and flowering heads present)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*)	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species; species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (*Hippophae rhamnoides*) should be absent or effectively controlled. See coastal habitats supporting document for further details

Table 18

Conservation Objectives for : North Dublin Bay SAC [000206]

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes including erosion and succession. For sub-sites mapped: North Bull - 40.29ha; South Bull - 64.56ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was surveyed and mapped at two sub-sites to give a total estimated area of 104.85ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Delaney et al. (2013). See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation resulting in increased rates of erosion. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Delaney et al. (2013). As well as the transitions between sand dune habitats, the transitions from sand dune to saltmarsh communities at Bull Island are of significant value. See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	Based on data from Gaynor (2008) and Delaney et al. (2013). Pedestrian tracks that are devoid of vegetation occur throughout the island. See coastal habitats supporting document for further details
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward	Based on data from Delaney et al. (2013). Grazing by livestock is absent from the island. However, the dunes are grazed by rabbits (*Oryctolagus cuniculus*) and hares (*Lepus timidus hibernicus*). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008) and Delaney et al. (2013). The protected and Red Data Book species red hemp nettle (*Galeopsis angustifolia*), meadow saxifrage (*Saxifraga granulata*), wild clary (*Salvia verbenaca*) and spring vetch (*Vicia lathyroides*) represent indicators of local distinctiveness. See coastal habitats supporting document for further details.
Vegetation composition: negative indicator species (including *Hippophae rhamnoides*)	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (*Hippophae rhamnoides*) should be absent or effectively controlled. It occurs as occasional patches at this site. See coastal habitats supporting document for further details
Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	Based on data from Delaney et al. (2013). There are numerous small trees and shrubs throughout the site but are not currently a significant management issue. See coastal habitats supporting document for further details

Table 19

Conservation Objectives for : North Dublin Bay SAC [000206]

2190 Humid dune slacks

To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area increasing, subject to natural processes including erosion and succession. For sub-sites mapped: North Bull - 2.96ha; South Bull - 9.15ha. See map 6	Based on data from the Sand Dunes Monitoring Project (SDM) (Delaney et al., 2013). Habitat was surveyed and mapped at two sub-sites to give a total estimated area of 12.11ha. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 6 for known distribution	Based on data from Delaney et al. (2013). The dune slack on North Bull consists of a long stretch of habitat that lies between successive dune ridges over a distance of approx. 700m. The dune slack topography is similar on South Bull with a number of individual long slacks between dune ridges. See coastal habitats supporting document for further details
Physical structure: functionality and sediment supply	Presence/ absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	Physical barriers can lead to fossilisation or over-stabilisation of dunes, as well as beach starvation, resulting in increased rates of erosion. See coastal habitats supporting document for further details
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime	Based on data from Delaney et al. (2013). On Bull Island there is some concern that the alder marsh at the North Bull is becoming increasingly brackish in nature. There is also the potential problem of fertiliser run-off, leading to an increase in nutrient levels. Water abstraction could result in a lowering of the water table, negatively affecting the dune slacks. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from Gaynor (2008) and Delaney et al. (2013). As well as the transitions between sand dune habitats, the transitions from sand dune to saltmarsh communities at Bull Island are of significant value. The transitional area between the fixed dunes and dune slacks are particularly important for a range of rare bryophytes (Lockhart et al., 2012). See coastal habitats supporting document for further details
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). Walking tracks traverse the dune slack at North Bull and have led to some erosion and poaching of soil. The slacks at the South Bull are close to the main access points to the island and pedestrian tracks have been created, leading to some erosion of vegetation cover. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from Gaynor (2008), Ryle et al. (2009) and Delaney et al. (2013). Grazing by livestock is absent from the island. However, the dunes are grazed by rabbits (*Oryctolagus cuniculus*) and hares (*Lepus timidus hibernicus*). See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et al. (2013)	Based on data from Gaynor (2008) and Delaney et al. (2013). The Annex II liverwort, petalwort (*Petalophyllum ralfsii*) has its only station away from the western seaboard at this site. See coastal habitats supporting document and conservation objective for 1395 for further details. See coastal habitats supporting document for further details
Vegetation composition: cover of *Salix repens*	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (*Salix repens*)	Based on data from Delaney et al. (2013). Cover of creeping willow (*Salix repens*) needs to be controlled (e.g. by an appropriate grazing regime) to prevent the development of a coarse, rank vegetation cover. See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from Delaney et al. (2013). Negative indicators include non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat. Sea-buckthorn (*Hippophae rhamnoides*) should be absent or effectively controlled. Patches of the shrub, particularly near the golf course boundaries, need to be kept in check on both the North and South Bull. See coastal habitats supporting document for further details
Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control	Based on data from Delaney et al. (2013). There are numerous shrubs and small trees throughout both sub-sites, but not to an extent that would require intensive management. See coastal habitats supporting document for further details

Table 20

Conservation Objectives for : North Dublin Bay SAC [000206]

1395 Petalwort *Petalophyllum ralfsii*

To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution of populations	Number and geographical spread of populations	No decline. See map 6	The known population of *Petalophyllum ralfsii* at Bull Island occurs along the track that cuts through the Alder marsh, south and east of St. Anne's Golf Club. Data from NPWS surveys and Campbell (2013)
Population size	Number of individuals	No decline. Population at Bull Island estimated at a maximum of 5,824 thalli. Actual population is more likely to be 5% of this, or c. 300 thalli	Counts of thalli are based on the mean of number of thalli in three 1 x 1m plots, averaged for 12 counts from February 2009 to March 2012: = 7.9 thalli per m^2 (Campbell, 2013). Maximum estimated population at Bull Island is therefore 7.86 x 741 = 5,824 thalli. As not all the habitat within the area of occupancy is suitable habitat, the actual number of thalli is likely to be much less, perhaps 5% of this figure, i.e. 291 (or c. 300)
Area of suitable habitat	Hectares	No decline. Area of suitable habitat at Bull Island is estimated at c. 0.04ha. See map 6	The area of occupancy is along the track through the Alder marsh, south and east of St. Anne's Golf Club. The width of the track is estimated to be about 1m. The length, measured by GPS co-ordinates, is 741m. The maximum area is thus 741m^2 (= 0.0741 ha). Not all the track is actually suitable habitat for *Petalophyllum ralfsii*. Some sections are too dry, some too permanently wet, and some sections too overgrown with coarse vegetation. Therefore c. 5% is suitable i.e. c. 37m^2 (=0.0037ha). See also conservation objectives for humid dune slacks (2190)
Hydrological conditions: soil moisture	Occurrence	Maintain hydrological conditions so that substrate is kept moist and damp throughout the year, but not subject to prolonged inundation by flooding in winter	*Petalophyllum ralfsii* grows in damp conditions. Attribute and target based on Campbell (2013)
Vegetation structure: height and cover	Centimetres and percentage	Maintain open, low vegetation with a high percentage of bryophytes (small acrocarps and liverwort turf) and bare ground	*Petalophyllum ralfsii* grows in compacted, sandy ground, maintained at this site by rabbit (*Oryctolagus cuniculus*) grazing and trampling (by walkers). Campbell (2013) recorded a mean height of vegetation of 3.3cm, with bryophyte cover c. 30% and bare ground c. 15% (based on three 1 x 1m plots between 2009 and 2011)

3.2.1.5 Baseline Conservation Status

A synopsis of the conservation status of this site is provided in Table 21 and Table 22.

Table 21: Habitat types present on site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
1140			577.7261		M	A	B	B	A
1210			0.1075		M	B	C	B	B
1310			29.10315		M	A	C	A	A
1320			73.75		M	D			
1330			82.2717		M	A	C	B	A
1410			7.98135		M	B	C	B	B
2110			6.0703		M	B	C	A	A
2120			3.1752		M	B	C	B	B
2130			104.8424		M	A	C	A	A
2190			12.1142		M	A	C	A	A

Table 22: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site					Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C	
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A054	Anas acuta			w	334	334	i		G	A	A	C	A
B	A056	Anas clypeata			w	239	239	i		G	B	A	C	A
B	A052	Anas crecca			w	1512	1512	i		G	B	A	C	B
B	A050	Anas penelope			w	1166	1166	i		G	C	A	C	B
B	A169	Arenaria interpres			w	197	197	i		G	C	A	C	B
B	A046	Branta bernicla			w	2333	2333	i		G	B	A	C	A
B	A144	Calidris alba			w	357	357	i		G	B	A	C	A
B	A149	Calidris alpina			w	6238	6238	i		G	B	A	C	A
B	A143	Calidris canutus			w	4423	4423	i		G	A	A	C	A
B	A137	Charadrius hiaticula			w	346	346	i		G	B	A	C	B
B	A130	Haematopus ostralegus			w	2190	2190	i		G	B	A	C	B
B	A157	Limosa lapponica			w	1586	1586	i		G	B	A	C	A
B	A156	Limosa limosa			w	156	156	i		G	C	A	C	B
B	A160	Numenius arquata			w	1193	1193	i		G	C	A	C	B
P	1395	Petalophyllum ralfsii			p	37	37	area		G	C	B	B	A
B	A140	Pluvialis apricaria			w	1000	1000	i		G	C	C	C	C
B	A141	Pluvialis squatarola			w	816	816	i		G	A	A	C	A
B	A195	Sterna albifrons			r	1	1	p		G	C	B	C	C
B	A048	Tadorna tadorna			w	1505	1505	i		G	B	A	C	A
B	A162	Tringa totanus			w	1175	1175	i		G	B	A	C	B

3.2.2 South Dublin Bay SAC site code 000210 (Site Synopsis Version 10/12/15, Natura 2000 Data Form Updated 09/18, Conservation Objectives Document Version 1)

There is a conservation objectives document for this site (www.npws.ie) from which the following is sourced, in addition to site synopses and Natura 2000 data form.

3.2.2.1 General Description

This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5 km. At their widest, the intertidal flats extend for almost 3 km. The seaward boundary is marked by the low tide mark, while the landward boundary is now almost entirely artificially embanked. 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. A number of small streams and drains flow into the site. The proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes. Site possesses a fine and fairly extensive example of intertidal flats. Sediment type is predominantly sand, with muddy sands in the more sheltered areas. A typical macro-invertebrate fauna exists. Has the largest stand of *Zostera* on the east coast. Supports part of the important wintering waterfowl populations of Dublin Bay. Regularly has an internationally population of *Branta bernicla horta*, plus nationally important numbers of at least a further 6 species, including *Limosa lapponica*. Regular autumn roosting ground for significant numbers of *Sterna terns*, including *S. dougallii*. The scientific interests of the site have been well documented.

3.2.2.2 Qualifying Interests

The Qualifying Interests of this site are outlined in Table 23.

Table 23

Qualifying Interests	
** indicates a priority habitat under the Habitats Directive*	
000210	South Dublin Bay SAC
1140	Mudflats and sandflats not covered by seawater at low tide

3.2.2.3 Threats, pressures and vulnerabilities

Threats pressures and vulnerabilities to the site as identified in the Natura 2000 data form are depicted in Table 24.

Table 24

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	D01.01		i
H	E02		o
M	E03		b
H	J02.01.02		o
M	F02.03.01		i
M	G01.01.02		i
M	G01.01		i
H	G01.02		i
H	K02.02		i
H	E01		o
M	H03		b
L	D01.02		o

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	M01		i
M	K02		i

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

3.2.2.4 Conservation Objectives

The Conservation Objective of this site as outlined in the detailed document (available from https://www.npws.ie/) are outlined in Table 25.

Table 25

Conservation Objectives for : South Dublin Bay SAC [000210]

1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated using OSi data as 720ha
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community, subject to natural processes. See map 4	Based on an intertidal survey undertaken in 2011 (MERC, 2012). See marine supporting document for further information
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes	Based on an intertidal survey undertaken in 2011 (MERC, 2012). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community type in a natural condition: Fine sands with *Angulus tenuis* community complex. See map 4	Based on intertidal surveys undertaken in 2006 (Aquafact, 2006) and 2011 (MERC, 2012). See marine supporting document for further information

3.2.2.5 Baseline Conservation Status

A synopsis of the conservation status of this site is provided in Table 26 and Table 27.

Table 26: Habitat types present on site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
11408			719.9478		M	B	B	B	B
12108			0.01		G	A	C	B	B
13108			0.01		G	A	C	B	B
21108			0.03		G	A	C	B	B

Table 27: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A169	Arenaria interpres			w	45	45	i		G	C	B	C	C
B	A046	Branta bernicla			w	299	299	i		G	C	B	C	A
B	A144	Calidris alba			w	344	344	i		G	B	B	C	A
B	A149	Calidris alpina			w	2628	2628	i		G	B	B	C	B
B	A143	Calidris canutus			w	432	432	i		G	C	B	C	B
B	A137	Charadrius hiaticula			w	120	120	i		G	C	B	C	B
B	A130	Haematopus ostralegus			w	1215	1215	i		G	C	B	C	B
B	A157	Limosa lapponica			w	565	565	i		G	B	B	C	B
B	A192	Sterna dougallii			c	150	300	i		G	B	B	C	A
B	A193	Sterna hirundo			c	1000	2000	i		G	B	B	C	A
B	A194	Sterna paradisaea			c	500	1000	i		G	B	B	C	A
B	A162	Tringa totanus			w	356	356	i		G	C	B	C	B

3.2.3 North Bull Island SPA site code 004046 (Site Synopsis Version 25/03/14, Natura 2000 Data Form Updated 09/18, Conservation Objectives Document Version 1)

There is a conservation objectives document for this site (www.npws.ie) from which the following is sourced, in addition to site synopses and Natura 2000 data form.

3.2.3.1 General Description

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 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the island is predominantly glacial in origin and siliceous in nature. A well-developed dune system runs the length of the island, with good examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Extensive salt marshes also occur. Between the island and the mainland occur two sheltered intertidal areas which are separated by a solid causeway constructed in 1964. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site. Part of the interior of the island has been converted to golf courses. The proximity of the North Bull Island to Dublin City results in it being a very popular recreational area. It is also very important for educational and research purposes. Nature conservation is a main land-use within the site. The site is among the top ten sites for wintering waterfowl in the country. It supports internationally important populations of *Branta bernicla hrota* and *Limosa lapponica* and is the top site in the country for both of these species. A further 14 species have populations of national importance, with particular notable numbers of *Tadorna tadorna* (8.5% of national total), *Anas acuta* (11.6% of national total), *Pluvialis squatarola* (6.9% of national total), *Calidris canutus* (10.5% of national total). North Bull Island SPA is a regular site for passage waders such as *Philomachus pugnax*, *Calidris ferruginea* and *Tringa erythropus*. The site supports *Asio flammeus* in winter. Formerly the site had an important colony of *Sterna albifrons* but breeding has not occurred in recent years. The site provides both feeding and roosting areas for the waterfowl species. Habitat quality for most of the estuarine habitats is very good. The site has a population of the rare *Petalophyllum ralfsii* which is the only known station away from the western seaboard as well as five Red Data Book vascular plant species and four bryophyte species. It is nationally important for three insect species. Wintering bird populations have been monitored more or less continuously since the late 1960s, and the other scientific interests of the site have also been well documented. Future prospects are good owing to various designations assigned to site.

3.2.3.2 Qualifying Interests

The Qualifying Interests of this site are outlined in Table 28.

Table 28

Qualifying Interests	
* indicates a priority habitat under the Habitats Directive	
004006	North Bull Island SPA
A046	Light-bellied Brent Goose *Branta bernicla hrota*
A048	Shelduck *Tadorna tadorna*
A052	Teal *Anas crecca*
A054	Pintail *Anas acuta*
A056	Shoveler *Anas clypeata*
A130	Oystercatcher *Haematopus ostralegus*
A140	Golden Plover *Pluvialis apricaria*
A141	Grey Plover *Pluvialis squatarola*
A143	Knot *Calidris canutus*
A144	Sanderling *Calidris alba*
A149	Dunlin *Calidris alpina alpina*
A156	Black-tailed Godwit *Limosa limosa*
A157	Bar-tailed Godwit *Limosa lapponica*
A160	Curlew *Numenius arquata*
A162	Redshank *Tringa totanus*
A169	Turnstone *Arenaria interpres*
A179	Black-headed Gull *Chroicocephalus ridibundus*
A999	Wetlands

3.2.3.3 Threats, Pressures and Vulnerabilities

The data as provided in the Natura 2000 form regarding threats, pressures and vulnerabilities at the site are illustrated in Table 29.

Table 29: Pressures, threats and activities potentially impacting upon this site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	D03.02		o
M	E03		o
M	G01.01		i
M	G02.01		i
M	F02.03.01		i
M	E02		o
M	D01.02		o
M	E01.01		o
L	E01.04		i
H	G01.02		i
M	E03		i
H	D01.05		i

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	G03		i
H	D01.02		o
H	D01.05		i
L	E01.04		i
H	G02.01		i

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

3.2.3.4 Conservation Objectives

The Conservation Objective of this site as outlined in the conservation objectives document are outlined in Table 30, Table 31, Table 32, Table 33, Table 34, Table 35, Table 36, Table 37, Table 38, Table 39, Table 40, Table 41, Table 42, Table 43, Table 44, Table 45, Table 46 and Table 47.

Table 30

Conservation Objectives for : North Bull Island SPA [004006]			
A046	**Light-bellied Brent Goose *Branta bernicla hrota***		
To maintain the favourable conservation condition of Light-bellied Brent Goose in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part fiveof the conservation objectives supporting document

Table 31

Conservation Objectives for : North Bull Island SPA [004006]			
A048	**Shelduck *Tadorna tadorna***		
To maintain the favourable conservation condition of Shelduck in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by shelduck, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 32

Conservation Objectives for : North Bull Island SPA [004006]			
A052	**Teal *Anas crecca***		
To maintain the favourable conservation condition of Teal in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by teal, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 33

Conservation Objectives for : North Bull Island SPA [004006]			
A054	**Pintail *Anas acuta***		
To maintain the favourable conservation condition of Pintail in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by pintail, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 34

Conservation Objectives for : North Bull Island SPA [004006]			
A056	**Shoveler *Anas clypeata***		
To maintain the favourable conservation condition of Shoveler in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by shoveler, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 35

Conservation Objectives for : North Bull Island SPA [004006]			
A130	**Oystercatcher *Haematopus ostralegus***		
To maintain the favourable conservation condition of Oystercatcher in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by oystercatcher, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part four of the conservation objectives supporting document

Table 36

Conservation Objectives for : North Bull Island SPA [004006]			
A140	**Golden Plover *Pluvialis apricaria***		
To maintain the favourable conservation condition of Golden Plover in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by golden plover, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 37

Conservation Objectives for : North Bull Island SPA [004006]

A141 Grey Plover *Pluvialis squatarola*

To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by grey plover, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 38

Conservation Objectives for : North Bull Island SPA [004006]

A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in North Bull Island SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by knot, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 39

Conservation Objectives for : North Bull Island SPA [004006]

A144 Sanderling *Calidris alba*

To maintain the favourable conservation condition of Sanderling in North Bull Island SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by sanderling, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 40

Conservation Objectives for : North Bull Island SPA [004006]			
A149	**Dunlin *Calidris alpina alpina***		
To maintain the favourable conservation condition of Dunlin in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by dunlin, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 41

Conservation Objectives for : North Bull Island SPA [004006]			
A156	**Black-tailed Godwit *Limosa limosa***		
To maintain the favourable conservation condition of Black-tailed Godwit in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by black-tailed godwit, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 42

Conservation Objectives for : North Bull Island SPA [004006]			
A157	**Bar-tailed Godwit *Limosa lapponica***		
To maintain the favourable conservation condition of Bar-tailed Godwit in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by bar-tailed godwit, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 43

Conservation Objectives for : North Bull Island SPA [004006]			
A160	**Curlew *Numenius arquata***		
To maintain the favourable conservation condition of Curlew in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by curlew, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 44

Conservation Objectives for : North Bull Island SPA [004006]			
A162	**Redshank *Tringa totanus***		
To maintain the favourable conservation condition of Redshank in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by redshank, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 45

Conservation Objectives for : North Bull Island SPA [004006]			
A169	**Turnstone *Arenaria interpres***		
To maintain the favourable conservation condition of Turnstone in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by turnstone, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 46

Conservation Objectives for : North Bull Island SPA [004006]			
A179	**Black-headed Gull *Chroicocephalus ridibundus***		
To maintain the favourable conservation condition of Black-headed Gull in North Bull Island SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by black-headed gull other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 47

Conservation Objectives for : North Bull Island SPA [004006]			
A999	**Wetlands**		
To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:			
Attribute	**Measure**	**Target**	**Notes**
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713 hectares, other than that occurring from natural patterns of variation. See map 3	The wetland habitat area was estimated as 1,713ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document

3.2.3.5 Baseline Conservation Status

A synopsis of the conservation status of this site is presented in Table 48.

Table 48: Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species						Population in the site					Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A054	Anas acuta			w	233	233	i		G	B	A	C	A
B	A056	Anas clypeata			w	141	141	i		G	B	A	C	A
B	A052	Anas crecca			w	953	953	i		G	C	A	C	B
B	A050	Anas penelope			w	660	660	i		G	C	A	C	C
B	A053	Anas platyrhynchos			w	87	87	i		G	C	A	C	C
B	A053	Anas platyrhynchos			w	87	87	i	P	G	C	A	C	C
B	A169	Arenaria interpres			w	157	157	i		G	C	A	C	B
B	A222	Asio flammeus			w	1	5	i		G	C	B	C	B
B	A046	Branta bernicla			w	1548	1548	i		G	B	A	C	A
B	A144	Calidris alba			w	141	141	i		G	B	A	C	A
B	A149	Calidris alpina			w	3926	3926	i		G	B	A	C	A
B	A143	Calidris canutus			w	2623	2623	i		G	B	A	C	A
B	A147	Calidris ferruginea			c	15	15	i		G	C	B	C	B
B	A145	Calidris minuta			c	5	5	i		G	C	B	C	C
B	A137	Charadrius hiaticula			w	129	129	i		G	C	A	C	B
B	A130	Haematopus ostralegus			w	1784	1784	i		G	B	A	C	A
B	A182	Larus canus			w	332	332	i		G	C	A	C	B
B	A179	Larus ridibundus			w	2196	2196	i		G	C	A	C	B
B	A157	Limosa lapponica			w	1529	1529	i		G	B	A	C	A
B	A156	Limosa limosa			w	367	367	i		G	B	A	C	B
B	A069	Mergus serrator			w	26	26	i		G	C	A	C	C
B	A160	Numenius arquata			w	937	937	i		G	C	A	C	B
B	A151	Philomachus pugnax			c	5	10	i		G	C	B	C	C
B	A140	Pluvialis apricaria			w	1681	1681	i		G	C	B	C	B
B	A141	Pluvialis squatarola			w	517	517	i		G	B	A	C	A
B	A048	Tadorna tadorna			w	1259	1259	i		G	B	A	C	A
B	A161	Tringa erythropus			c	3	3	i		G	C	B	C	C
B	A164	Tringa nebularia			w	16	16	i		G	C	A	C	C
B	A162	Tringa totanus			w	1431	1431	i		G	B	A	C	A

3.2.4 South Dublin Bay and River Tolka Estuary SPA site code 004024 (Site Synopsis Version 03/05/15, Natura 2000 Data Form Updated 09/18, Conservation Objectives Document Version 1)

There is a conservation objectives document for this site (www.npws.ie) from which the following is sourced, in addition to site synopses and Natura 2000 data form.

3.2.4.1 General Description

This site comprises a substantial part of Dublin Bay. It includes virtually all of the intertidal area in the south bay, as well as much of the Tolka Estuary to the north of the River Liffey. A portion of the shallow bay waters 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. The sands support the largest stand of *Zostera noltii* on the East Coast. 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. 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 proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes. The site possesses extensive intertidal flats which support wintering waterfowl which are part of the overall Dublin Bay population. It regularly has an internationally important population of *Branta bernicla hrota*, which feeds on *Zostera noltii* in the autumn. It has nationally important numbers of a further 6 species: *Haematopus ostralegus, Charadrius hiaticula, Calidris canutus, Calidris alba, Calidris alpina* and *Limosa lapponica*. It is an important site for wintering gulls, especially *Larus ridibundus* and *Larus canus*. South Dublin Bay is the premier site in Ireland for *Larus melanocephalus*, with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including *Sterna dougallii, S. hirundo* and *S. paradisaea*.

3.2.4.2 Qualifying Interests

The Qualifying Interests of this site are outlined in Table 49.

Table 49

Qualifying Interests	
* *indicates a priority habitat under the Habitats Directive*	
004024	South Dublin Bay and River Tolka Estuary SPA
A046	Light-bellied Brent Goose *Branta bernicla hrota*
A130	Oystercatcher *Haematopus ostralegus*
A137	Ringed Plover *Charadrius hiaticula*
A141	Grey Plover *Pluvialis squatarola*
A143	Knot *Calidris canutus*
A144	Sanderling *Calidris alba*
A149	Dunlin *Calidris alpina alpina*
A157	Bar-tailed Godwit *Limosa lapponica*
A162	Redshank *Tringa totanus*
A179	Black-headed Gull *Chroicocephalus ridibundus*
A192	Roseate Tern *Sterna dougallii*
A193	Common Tern *Sterna hirundo*
A194	Arctic Tern *Sterna paradisaea*
A999	Wetlands

3.2.4.3 Threats, Pressures and Vulnerabilities

The data as provided in the Natura 2000 form regarding threats, pressures and vulnerabilities at the site are depicted in Table 50.

Table 50

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	E02		o
M	F02.03.01		i
H	G01.02		i
M	G01.01		i
M	F02.03		i
H	E01		o
H	J02.01.02		o
M	K02.03		i
H	E03		i
M	D01.02		o

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	F02.03		i
M	G01.01		i

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification.
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

3.2.4.4 *Conservation Objectives*

The Conservation Objectives of this site as outlined in the conservation objectives document are outlined in Table 51, Table 52, Table 54, Table 55, Table 56, Table 57, Table 58, Table 59, Table 60, Table 61, Table 62, Table 63 and Table 64.

Table 51

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A046 Light-bellied Brent Goose *Branta bernicla hrota*

To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 52

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]			
A130	**Oystercatcher *Haematopus ostralegus***		
To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by oystercatcher, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part four of the conservation objectives supporting document

Table 53

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]			
A137	**Ringed Plover *Charadrius hiaticula***		
To maintain the favourable conservation condition of Ringed Plover in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by ringed plover, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of conservation objectives supporting document

Table 54

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]			
A141	**Grey Plover *Pluvialis squatarola***		
Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species.			
Attribute	**Measure**	**Target**	**Notes**

Table 55

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by knot, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 56

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A144 Sanderling *Calidris alba*

To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by sanderling, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 57

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A149 Dunlin *Calidris alpina alpina*

To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by dunlin, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 58

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A157 Bar-tailed Godwit *Limosa lapponica*

To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by bar-tailed godwit, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 59

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A162 Redshank *Tringa totanus*

To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by redshank, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 60

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]			
A179	**Black-headed Gull *Chroicocephalus ridibundus***		
To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:			
Attribute	**Measure**	**Target**	**Notes**
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by black-headed gull other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in part five of the conservation objectives supporting document

Table 61

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A192 Roseate Tern *Sterna dougallii*

To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Passage population: individuals	Number	No significant decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (*Sterna hirundo*), with smaller numbers of Arctic and roseate terns (*S. paradisaea, S. dougallii*) (sandwich, little and black terns (*S. sandvicensis, S. albifrons, Chlidonias niger*) were also recorded) (Merne et al., 2008; Merne 2010). At least 645 roseate tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of roseate tern using this SPA may be significantly higher
Distribution: roosting areas	Number; location; area (hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Inshtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008)
Prey biomass available	Kilogrammes	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season, roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small, schooling marine fish, very rarely small crustaceans. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater

Continued overleaf.....

Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns	Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing

Table 62

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A193 Common Tern *Sterna hirundo*

To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). For more information on the history and recent population estimates of the tern colony at this SPA see Newton et al. (2014)
Productivity rate: fledged young per breeding pair	Mean number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). For more information on the history and recent population estimates of the tern colony at this SPA see Newton et al. (2014)
Passage population: individuals	Number	No significant decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording), it was rarely possible to identify terns to species level but the majority of the birds appear to have been common terns (*Sterna hirundo*), with smaller numbers of Arctic and roseate terns (*S. paradisaea, S. dougallii*); (sandwich, little and black terns (*S. sandvicensis, S. albifrons, Chlidonias niger*) were also recorded) (Merne et al., 2008; Merne 2010). At least 4,887 common tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of common tern using this SPA may be significantly higher
Distribution: breeding colonies	Number; location; area (Hectares)	No significant decline	The common tern breeding colony in Dublin Bay is primarily sited on an artificial structure known as the 'ESB Dolphin' (see Newton et al., 2014)
Distribution: roosting areas	Number; location; area (Hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay, primarily between the Martello Towers of at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually joined the birds roosting in the main area (Merne et al 2008)
Prey biomass available	Kilogrammes	No significant decline	During the breeding season, common terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small fish, crustaceans, insects and occasionally squid. Key habitats: forage in/over shallow coastal waters, bays, inlets, shoals, tidal-rips, drift lines, beaches, saltmarsh creeks, lakes, ponds or rivers. Foraging range: max. 37km; mean max. 33.81km; mean 8.67km (Birdlife International, 2014). Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). Foraging ranges between post-breeding roost sites and feeding areas may be greater than the estimates given for the breeding season

Continued overleaf

Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	During the breeding season, common terns can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 37km; mean max. 33.81km; mean 8.67km (Birdlife International, 2014). Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest the bird were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). Foraging ranges between post-breeding roost sites and feeding areas may be greater than the estimates given for the breeding season
Disturbance at breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population	The common tern breeding colony in Dublin Bay is primarily sited on an artificial structure known as the 'ESB Dolphin' (see Newton et al., 2014)
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns	Merne et al (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al 2008; Merne 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing

Table 63

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]

A194 Arctic Tern *Sterna paradisaea*

To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Passage population	Number of individuals	No significant decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (*Sterna hirundo*), with smaller numbers of Arctic and roseate terns (*S. paradisaea, S. dougallii*); (sandwich, little and black terns (*S. sandvicensis, S. albifrons, Chlidonias niger*) were also recorded) (Merne et al., 2008; Merne 2010). At least 200 Arctic tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of Arctic tern using this SPA may be significantly higher
Distribution: roosting areas	Number; location; area (hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008)
Prey biomass available	Kilogrammes	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season Arctic terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small fish, crustaceans and other invertebrates. Key habitats: forage in/over open waters and shallow bays, rocky shores, tidal flats, shoals, tide rips and ocean fronts. Foraging range: max. 20.6km, mean max. 12.24km, mean 11.75km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of arriving terns to the primary roosting area indicated that most flew into Dublin Bay from an easterly and southeasterly direction leading the authors to suggest the birds were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season Arctic terns can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 20.6km, mean max. 12.24km, mean 11.75km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns	Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing

Table 64

Conservation Objectives for : South Dublin Bay and River Tolka Estuary SPA [004024]			
A999	Wetlands		
To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:			
Attribute	**Measure**	**Target**	**Notes**
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation. See map 3	The wetland habitat area was estimated as 2,192ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document

3.2.4.5 *Baseline Conservation status*

A synopsis of the conservation status of this site is presented in Table 65.

Table 65

Species						Population in the site					Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo
B	A169	Arenaria interpres			w	52	52	i		G	C	B	C	C
B	A046	Branta bernicla			w	368	368	i		G	C	A	C	A
B	A144	Calidris alba			w	321	321	i		G	B	A	C	A
B	A149	Calidris alpina			w	1923	1923	i		G	C	B	C	B
B	A143	Calidris canutus			w	548	548	i		G	B	B	C	B
B	A137	Charadrius hiaticula			w	161	161	i		G	C	B	C	B
B	A130	Haematopus ostralegus			w	1145	1145	i		G	C	B	C	B
B	A182	Larus canus			w	330	330	i		G	C	B	C	B
B	A176	Larus melanocephalus			c	10	20	i		G	B	A	C	A
B	A176	Larus melanocephalus			w	10	20	i		G	B	A	C	A
B	A179	Larus ridibundus			w	3040	3040	i		G	C	B	C	B
B	A157	Limosa lapponica			w	766	766	i		G	B	B	C	A
B	A069	Mergus serrator			w	17	17	i		G	C	B	C	C
B	A160	Numenius arquata			w	127	127	i		G	C	B	C	C
B	A017	Phalacrocorax carbo			w	24	24	i		G	C	B	C	C
B	A141	Pluvialis squatarola			w	45	45	i		G	C	B	C	C
B	A005	Podiceps cristatus			w	21	21	i		G	C	B	C	C
B	A192	Sterna dougallii			c	200	500	i		G	A	A	C	A
B	A193	Sterna hirundo			c	2000	3000	i		G	B	A	C	A
B	A194	Sterna paradisaea			c	1000	2000	i		G	B	A	C	A
B	A162	Tringa totanus			w	260	260	i		G	C	B	C	C

3.1 Summary of Conservation Status of Natura 2000 sites potentially exposed to significant negative impacts

The focus of the Appropriate Assessment process at the second stage must be on the integrity of European sites "in light of their conservation objectives." A summary of the current conservation status of the qualifying interests (Nationally, where available, as indicated in the NPWS document "Status of EU Protected Habitats and Species in Ireland (2019)", and site-specific baseline conservation status as recorded in the individual Natura 2000 form) and conditions underpinning site integrity is presented in Table 66.

Table 66

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
NORTH DUBLIN BAY SAC	[1140]	RANGE	FAVOURABLE =	REPRESENTATIVITY	A	WATER QUALITY
		AREA	FAVOURABLE =	RELATIVE SURFACE	B	POLLUTION LEVELS MINIMISED
		STRUCTURES AND FUNCTIONS	UNFAVOURABLE/INADEQUATE ↓	CONSERVATION	B	APPROPRIATE AGRICULTURAL PRACTICES
		FUTURE PROSPECTS	UNFAVOURABLE/INADEQUATE	GLOBAL	A	SURFACE AND GROUND WATER QUALITY
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE ↓			APPROPRIATE LEVELS OF DISTURBANCE
						WATER LEVELS
	[1210]	RANGE	FAVOURABLE =	REPRESENTATIVITY	B	APPROPRIATE SALINITY MAINTAINED
		AREA	UNFAVOURABLE/INADEQUATE ↓	RELATIVE SURFACE	C	AIR QUALITY
		STRUCTURES AND FUNCTIONS	FAVOURABLE =	CONSERVATION	B	TIDAL CURRENTS
		FUTURE PROSPECTS	UNFAVOURABLE/INADEQUATE	GLOBAL	B	EROSION/SEDIMENTATION REGIME
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE ↓			APPROPRIATE DEVELOPMENT
	[1310]	RANGE	FAVOURABLE =	REPRESENTATIVITY	A	
		AREA	FAVOURABLE =	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	FAVOURABLE =	CONSERVATION	A	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		FUTURE PROSPECTS	FAVOURABLE =	GLOBAL	A	
		OVERALL STATUS	FAVOURABLE			
	[1330]	RANGE	FAVOURABLE =	REPRESENTATIVITY	A	
		AREA	UNFAVOURABLE/INADEQUATE ↓	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	UNFAVOURABLE/INADEQUATE=	CONSERVATION	B	
		FUTURE PROSPECTS	UNFAVOURABLE/INADEQUATE	GLOBAL	A	
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE ↓			
	[1395]	RANGE	FAVOURABLE =	REPRESENTATIVITY	B	
		AREA	FAVOURABLE =	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	FAVOURABLE =	CONSERVATION	B	
		FUTURE PROSPECTS	FAVOURABLE =	GLOBAL	B	
		OVERALL STATUS	FAVOURABLE			
	[1410]	RANGE	FAVOURABLE =	REPRESENTATIVITY	B	
		AREA	UNFAVOURABLE/INADEQUATE ↓	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	FAVOURABLE =	CONSERVATION	B	
		FUTURE PROSPECTS	UNFAVOURABLE/INADEQUATE	GLOBAL	B	
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE ↓			
	[2110]	RANGE	FAVOURABLE =	REPRESENTATIVITY	B	
		AREA	FAVOURABLE =	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	UNFAVOURABLE/INADEQUATE=	CONSERVATION	A	
		FUTURE PROSPECTS	UNFAVOURABLE - INADEQUATE	GLOBAL	A	
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE=			

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
	[2120]	RANGE	FAVOURABLE=	REPRESENTATIVITY	B	
		AREA	UNFAVOURABLE/INADEQUATE ↓	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	FAVOURABLE	CONSERVATION	B	
		FUTURE PROSPECTS	UNFAVOURABLE - INADEQUATE	GLOBAL	B	
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE=			
	[2130]	RANGE	FAVOURABLE=	REPRESENTATIVITY	A	
		AREA	UNFAVOURABLE/INADEQUATE=	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	BAD↓	CONSERVATION	A	
		FUTURE PROSPECTS	UNFAVOURABLE - BAD	GLOBAL	A	
		OVERALL STATUS	BAD↓			
	[2190]	RANGE	UNFAVOURABLE/INADEQUATE ↓	REPRESENTATIVITY	A	
		AREA	UNFAVOURABLE/INADEQUATE ↓	RELATIVE SURFACE	C	
		STRUCTURES AND FUNCTIONS	UNFAVOURABLE/INADEQUATE=	CONSERVATION	A	
		FUTURE PROSPECTS	UNFAVOURABLE-INADEQUATE	GLOBAL	A	
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE ↓			
SOUTH DUBLIN BAY SAC	[1140]	RANGE	FAVOURABLE =	REPRESENTATIVITY	B	WATER QUALITY
		AREA	FAVOURABLE =	RELATIVE SURFACE	B	POLLUTION LEVELS MINIMISED
		STRUCTURES AND FUNCTIONS	UNFAVOURABLE/INADEQUATE ↓	CONSERVATION	B	APPROPRIATE AGRICULTURAL PRACTICES
		FUTURE PROSPECTS	UNFAVOURABLE/INADEQUATE	GLOBAL	B	SURFACE AND GROUND WATER QUALITY
		OVERALL STATUS	UNFAVOURABLE/INADEQUATE ↓			APPROPRIATE LEVELS OF DISTURBANCE
						WATER LEVELS
						APPROPRIATE SALINITY MAINTAINED
						AIR QUALITY
						TIDAL CURRENTS

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
						EROSION/SEDIMENTATION REGIME
						APPROPRIATE DEVELOPMENT
NORTH BULL ISLAND	**A046**	RANGE	N/A	REPRESENTATIVITY	B	WATER QUALITY
SPA		AREA	N/A	RELATIVE SURFACE	A	POLLUTION LEVELS MINIMISED
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	APPROPRIATE AGRICULTURAL PRACTICES
		FUTURE PROSPECTS	N/A	GLOBAL	A	SURFACE AND GROUND WATER QUALITY
		OVERALL STATUS	N/A			APPROPRIATE LEVELS OF DISTURBANCE
						WATER LEVELS
	A048	RANGE	N/A	REPRESENTATIVITY	B	APPROPRIATE SALINITY MAINTAINED
		AREA	N/A	RELATIVE SURFACE	A	AIR QUALITY
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	TIDAL CURRENTS
		FUTURE PROSPECTS	N/A	GLOBAL	A	EROSION/SEDIMENTATION REGIME
		OVERALL STATUS	N/A			APPROPRIATE DEVELOPMENT
						APPROPRIATE AMENITY USE
	A052	RANGE	N/A	REPRESENTATIVITY	C	CONDITIONS AT ADJACENT SITES
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A054	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		OVERALL STATUS	N/A			
	A056	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A130	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A140	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A141	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A143	RANGE	N/A	REPRESENTATIVITY	B	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A144	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A149	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A156	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A157	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		OVERALL STATUS	N/A			
	A160	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A162	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A169	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A179	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A999	RANGE	N/A	REPRESENTATIVITY	N/A	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		AREA	N/A	RELATIVE SURFACE	N/A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	N/A	
		FUTURE PROSPECTS	N/A	GLOBAL	N/A	
		OVERALL STATUS	N/A			
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA	**A046**	RANGE	N/A	REPRESENTATIVITY	C	WATER QUALITY
		AREA	N/A	RELATIVE SURFACE	A	POLLUTION LEVELS MINIMISED
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	APPROPRIATE AGRICULTURAL PRACTICES
		FUTURE PROSPECTS	N/A	GLOBAL	A	SURFACE AND GROUND WATER QUALITY
		OVERALL STATUS	N/A			APPROPRIATE LEVELS OF DISTURBANCE
						WATER LEVELS
	A130	RANGE	N/A	REPRESENTATIVITY	C	APPROPRIATE SALINITY MAINTAINED
		AREA	N/A	RELATIVE SURFACE	B	AIR QUALITY
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	TIDAL CURRENTS
		FUTURE PROSPECTS	N/A	GLOBAL	B	EROSION/SEDIMENTATION REGIME
		OVERALL STATUS	N/A			APPROPRIATE DEVELOPMENT
						APPROPRIATE AMENITY USE
	A137	RANGE	N/A	REPRESENTATIVITY	C	CONDITIONS AT ADJACENT SITES
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A141	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	C	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		OVERALL STATUS	N/A			
	A143	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A144	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A149	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A157	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A162	RANGE	N/A	REPRESENTATIVITY	C	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	C	
		OVERALL STATUS	N/A			
	A179	RANGE	N/A	REPRESENTATIVITY	C	
		AREA	N/A	RELATIVE SURFACE	B	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	B	
		OVERALL STATUS	N/A			
	A192	RANGE	N/A	REPRESENTATIVITY	A	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A193	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	
		OVERALL STATUS	N/A			
	A194	RANGE	N/A	REPRESENTATIVITY	B	
		AREA	N/A	RELATIVE SURFACE	A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	C	
		FUTURE PROSPECTS	N/A	GLOBAL	A	

SITE NAME	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS (2019)		SITE ASSESSMENT OF BASELINE CONSERVATION STATUS N2000 DATA FORM		CONDITIONS UNDERPINNING SITE INTEGRITY
		OVERALL STATUS	N/A			
	A999	RANGE	N/A	REPRESENTATIVITY	N/A	
		AREA	N/A	RELATIVE SURFACE	N/A	
		STRUCTURES AND FUNCTIONS	N/A	CONSERVATION	N/A	
		FUTURE PROSPECTS	N/A	GLOBAL	N/A	
		OVERALL STATUS	N/A			

3.2 Impact Prediction

3.2.1 Identified Pathways

As identified in Section 2, the proposed development is proximate to the Whitechurch stream, water from which eventually discharges to the Irish Sea, in the vicinity of a suite of Natura 2000 sites. There is potential for the proposed development to have indirect impacts on these sites through an impact on water quality of the adjacent watercourse during construction and/or operation.

3.2.2 Potential Impacts on Qualifying Interests of sites

The Qualifying Interests (habitat/species), Sensitivities of Qualifying Interests and Potential Impacts affecting Qualifying Interests is indicated in Table 67.

Table 67: Summary of potential impacts on Qualifying Interests of relevant Natura 2000 sites

SITE NAME	QUALIFYING INTEREST	SENSITIVITIES ASSOCIATED WITH POTENTIAL DEVELOPMENTS	POTENTIAL IMPACT(S) FROM PROPOSED DEVELOPMENT IN ABSENCE OF ANY MITIGATION MEASURES
NORTH DUBLIN BAY SAC	**[1140]**	CHANGES IN WATER QUALTIY	IMPACTS ASSOCIATED WITH EUTROPHICATION
	[1210]	HABITAT LOSS	NONE FORESEEN
		CHANGES IN TIDAL REGIME	NONE FORESEEN
		ALIEN INVASIVE PLANT SPECIES	NONE FORESEEN
	[1310]	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMEMENTATION	NONE FORESEEN
		CHANGES IN WATER QUALITY	NONE FORESEEN
		ALIEN INVASIVE PLANT SPECIES	NONE FORESEEN
	[1330]	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMEMENTATION	NONE FORESEEN
		CHANGES IN WATER QUALITY	NONE FORESEEN
		ALIEN INVASIVE PLANT SPECIES	NONE FORESEEN
	[1395]	HABITAT LOSS	NONE FORESEEN
		DISTURBNACE THROUGH PICKING ETC	NONE FORESEEN
	[1410]	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMEMENTATION	NONE FORESEEN
		CHANGES IN WATER QUALITY	NONE FORESEEN
		ALIEN INVASIVE PLANT SPECIES	NONE FORESEEN
	[2110]	HABITAT LOSS	NONE FORESEEN
		CHANGES IN TIDAL REGIME	NONE FORESEEN
	[2120]	HABITAT LOSS	NONE FORESEEN
		CHANGES IN TIDAL REGIME	NONE FORESEEN

SITE NAME	QUALIFYING INTEREST	SENSITIVITIES ASSOCIATED WITH POTENTIAL DEVELOPMENTS	POTENTIAL IMPACT(S) FROM PROPOSED DEVELOPMENT IN ABSENCE OF ANY MITIGATION MEASURES
	[2130]	HABITAT LOSS	NONE FORESEEN
		CHANGES IN TIDAL REGIME	NONE FORESEEN
		ALIEN INVASIVE PLANT SPECIES	NONE FORESEEN
	[2190]	HABITAT LOSS	NONE FORESEEN
		CHANGES IN HYDROLOICAL REGIME	NONE FORESEEN
		DISTURBANCE	NONE FORESEEN
SOUTH DUBLIN BAY SAC	[1140]	CHANGES IN WATER QUALTIY	IMPACTS ASSOCIATED WITH EUTROPHICATION
NORTH BULL ISLAND SPA	A046	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A048	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A052	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A054	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A056	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES

SITE NAME	QUALIFYING INTEREST	SENSITIVITIES ASSOCIATED WITH POTENTIAL DEVELOPMENTS	POTENTIAL IMPACT(S) FROM PROPOSED DEVELOPMENT IN ABSENCE OF ANY MITIGATION MEASURES
	A130	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A140	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A141	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A143	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A144	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A149	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A156	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A157	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A160	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES

SITE NAME	QUALIFYING INTEREST	SENSITIVITIES ASSOCIATED WITH POTENTIAL DEVELOPMENTS	POTENTIAL IMPACT(S) FROM PROPOSED DEVELOPMENT IN ABSENCE OF ANY MITIGATION MEASURES
	A162	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A169	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A179	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A999	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMENTATION, CHANGES IN WATER QUALITY, ALIEN INVASIVE PLANT SPECIES	NONE FORSEEN
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA	**A046**	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A130	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A137	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A141	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES

SITE NAME	QUALIFYING INTEREST	SENSITIVITIES ASSOCIATED WITH POTENTIAL DEVELOPMENTS	POTENTIAL IMPACT(S) FROM PROPOSED DEVELOPMENT IN ABSENCE OF ANY MITIGATION MEASURES
	A143	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A144	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A149	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A157	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A162	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A179	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A192	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A193	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES
	A194	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES DISTURBANCE	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN FORAGING RESOURCES

SITE NAME	QUALIFYING INTEREST	SENSITIVITIES ASSOCIATED WITH POTENTIAL DEVELOPMENTS	POTENTIAL IMPACT(S) FROM PROPOSED DEVELOPMENT IN ABSENCE OF ANY MITIGATION MEASURES
	A999	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMENTATION, CHANGES IN WATER QUALITY, ALIEN INVASIVE PLANT SPECIES	NONE FORSEEN

3.3 Mitigation Measures – avoiding potential impacts

The primary source of potential negative impacts on the conservation objectives of the Natura 2000 sites considered herein regards the potential for impacts on water quality associated with the construction and/or operation of the proposed development

3.3.1 Mitigation measures- construction

The primary mitigation measures to be implemented will involve the protection of water quality. During all works, protection of water quality is paramount, and should be ensured by implementing the following generic mitigation measures in addition to any site-specific mitigation measures identified by the site engineer, etc.:

The Contractor shall undertake all proposed works in such a manner as to avoid degradation of water quality either by pollution (in particular, from any paint-chips, chemicals utilised to remove paint/rust, etc.) from oil spills, or contamination due to concreting or grouting operations, or by causing turbidity due to disturbance of silt or spoil from operations.

Specific measures to be taken to prevent the above shall include the following:

- The Undertaker shall take special precautions in relation to protection of watercourses. Temporary environmental screens shall be erected sufficient to prevent construction debris (paint chips/rust, etc.), abrasive materials, oils, chemicals or other construction materials from entering any watercourse/drain for the duration of the works. The Undertaker's method statement should make specific reference to measures for the protection of river quality;
- Undertaker's plant, equipment etc. shall be free of any mechanical defects, and be well maintained so as to prevent soil or fuel leaks into the river;
- Undertaker's plant, equipment etc. must arrive on site free of propagules of any plant species listed on Part (1) of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 as amended;
- The Undertaker shall so arrange that the cleaning out of concrete delivery trucks and equipment does not cause run-off to enter any watercourse/drains, etc.;
- The Undertaker's method statement should make specific reference to measures for the protection of river water quality, to include measures to ensure no spillage of fuel or cement/lime-based material or any other leakages occur to any drains/water courses for the duration of the works;

- All works will be undertaken in accordance with the following best practice guidelines for working alongside watercourses:
    - CIRIA Control of Water Pollution from Construction sites – Guidance for Consultants and Contactors (2001).
    - Eastern Regional Fisheries Board Guidance Notes 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites' (Eastern Regional Fisheries Board, 2006);
    - NRA Guidelines (2006) NRA Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes.

A secondary concern relates to the presence of Spanish Bluebell/Hybrids within the proposed development site. In order to prevent the spread of propagules, the population should be eradicated and an Alien Invasive Plant Species Management and Control Plan implemented.

3.3.2 Mitigation - operation

It is essential that there be no impact on water quality of the proximate watercourse associated with the operation of the proposed development. To this end, there can be no discharge of water of any kind (including surface water from getters, etc.) to the adjacent water course.

The proposed development is within the Ringsend Agglomeration and will be serviced by the Ringsend Waste Water Treatment Plant. This WWTP has failed to comply with emissions limits in the recent past. Upgrades and new WWTPs coming online will work to prevent any significant negative impact associated with the proposed development. The capacity of existing and planned services to cope with additional loading is the responsibility of Irish Water.

The significance of potential impacts on the conservation objectives of qualifying interests following the implementation of mitigation measures is outlined in Table 68.

Table 68: Significance of potential impacts following implementation of mitigation measures

SITE NAME	QUALIFYING INTEREST	POTENTIAL IMPACTS ASSOCIATED WITH DEVELOPMENT IN THE ABSENCE OF MITIGATION MEASURES	SIGNIFICANCE OF POTENTIAL IMPACTS FOLLOWING IMPLEMENTATION OF MITIGATION MEASURES
NORTH DUBLIN BAY SAC	**[1140]**	OVER -GRAZING OF ZOSTERA BEDS ASSOCIATED WITH CHANGES IN HABITAT USE BY SPECIES SUCH AS LIGHT BELIED BRENT GOOSE	NOT SIGNIFICANT
	[1210]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN TIDAL REGIME	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
	[1310]	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMEMENTATION	NOT SIGNIFICANT
		CHANGES IN WATER QUALITY	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
	[1330]	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMEMENTATION	NOT SIGNIFICANT
		CHANGES IN WATER QUALITY	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
	[1395]	HABITAT LOSS	NOT SIGNIFICANT
		DISTURBNACE THROUGH PICKING ETC	NOT SIGNIFICANT
	[1410]	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMEMENTATION	NOT SIGNIFICANT
		CHANGES IN WATER QUALITY	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
	[2110]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN TIDAL REGIME	NOT SIGNIFICANT
	[2120]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN TIDAL REGIME	NOT SIGNIFICANT

SITE NAME	QUALIFYING INTEREST	POTENTIAL IMPACTS ASSOCIATED WITH DEVELOPMENT IN THE ABSENCE OF MITIGATION MEASURES	SIGNIFICANCE OF POTENTIAL IMPACTS FOLLOWING IMPLEMENTATION OF MITIGATION MEASURES
	[2130]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN TIDAL REGIME	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
	[2190]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN HYDROLOICAL REGIME	NOT SIGNIFICANT
		DISTURBANCE	NOT SIGNIFICANT
		CHANGES IN WATER QUALITY	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
	[2120]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN TIDAL REGIME	NOT SIGNIFICANT
	[2130]	HABITAT LOSS	NOT SIGNIFICANT
		CHANGES IN TIDAL REGIME	NOT SIGNIFICANT
		ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT
SOUTH DUBLIN BAY SAC	**[1140]**	OVER -GRAZING OF ZOSTERA BEDS ASSOCIATED WITH CHANGES IN HABITAT USE BY SPECIES SUCH AS LIGHT BELIED BRENT GOOSE	NOT SIGNIFICANT
NORTH BULL ISLAND SPA	**A046**	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A048	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT

SITE NAME	QUALIFYING INTEREST	POTENTIAL IMPACTS ASSOCIATED WITH DEVELOPMENT IN THE ABSENCE OF MITIGATION MEASURES	SIGNIFICANCE OF POTENTIAL IMPACTS FOLLOWING IMPLEMENTATION OF MITIGATION MEASURES
	A052	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A054	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A056	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A130	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A140	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A141	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A143	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A144	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT

SITE NAME	QUALIFYING INTEREST	POTENTIAL IMPACTS ASSOCIATED WITH DEVELOPMENT IN THE ABSENCE OF MITIGATION MEASURES	SIGNIFICANCE OF POTENTIAL IMPACTS FOLLOWING IMPLEMENTATION OF MITIGATION MEASURES
	A149	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A156	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A157	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A160	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A162	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A169	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A179	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A999	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMENTATION, CHANGES IN WATER QUALITY, ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT

SITE NAME	QUALIFYING INTEREST	POTENTIAL IMPACTS ASSOCIATED WITH DEVELOPMENT IN THE ABSENCE OF MITIGATION MEASURES	SIGNIFICANCE OF POTENTIAL IMPACTS FOLLOWING IMPLEMENTATION OF MITIGATION MEASURES
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA	**A046**	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A130	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A137	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A141	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A143	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A144	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A149	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A157	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT

SITE NAME	QUALIFYING INTEREST	POTENTIAL IMPACTS ASSOCIATED WITH DEVELOPMENT IN THE ABSENCE OF MITIGATION MEASURES	SIGNIFICANCE OF POTENTIAL IMPACTS FOLLOWING IMPLEMENTATION OF MITIGATION MEASURES
	A162	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A179	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A192	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A193	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A194	CHANGES IN POPULATION LEVELS ASSOCIATED WITH CHANGES IN DISTURBANCE/FEEDING RESOURCES AT NEARBY SITES	NOT SIGNIFICANT
	A999	CHANGES IN HYDROLOGICAL REGIME/EROSION/SEDIMENTATION, CHANGES IN WATER QUALITY, ALIEN INVASIVE PLANT SPECIES	NOT SIGNIFICANT

4 Conclusions

In order for AA to comply with the criteria set out in the Habitats Directive and the Planning and Development Act 2000, an AA undertaken by the Competent Authority must include an examination, analysis, evaluation, findings, conclusions, and a final determination.

Following the identification of a potential impact(s) upon one or more Natura 2000 sites through an Appropriate Assessment Screening exercise, a Stage 2 Appropriate Assessment of the proposed development has been carried out in accordance with the requirements of Article 6(3) of the Habitats Directive (Council Directive 92/43/EEC). The information to enable the Competent Authority to perform its statutory function in this regard is presented within this NIS.

Following an examination, analysis, and evaluation of the relevant information, and applying the precautionary principle, it is the professional opinion of the authors of this report that there will be no adverse impact on the integrity of any of relevant Natura 2000 sites, assuming the implementation of all mitigation/preventative measures as outlined. Consequently, there will be no risk of adverse effects on Qualifying Interest habitats or species, nor the attainment of specific conservation objectives, either alone or in-combination with other plans or projects, for the relevant Natura 2000 sites. The ecological integrity of the Natura 2000 sites concerned (connected with qualifying interests for which the sites have been designated) will not be significantly impacted.

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