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NATURA IMPACT STATEMENT OF A PROPOSED RESIDENTIAL DEVELOPMENT (LRD) AT WOODTOWN, BALLYCULLEN, DUBLIN 24

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Blanchardstown Corporate Park
Dublin 15

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1 INTRODUCTION

1.1 REQUIREMENT FOR AN APPROPRIATE ASSESSMENT

Whitehill Environmental was appointed by Lagan Homes Ireland Ltd to provide the necessary information to allow the competent authority (in this case South Dublin County Council) to conduct an Article 6 (3) Appropriate Assessment for a proposed strategic housing development in Woodtown, Ballycullen, Dublin 24. This information is being submitted as a Natura Impact Statement (NIS). This NIS was undertaken as a precautionary approach on the basis that pathways for effects on surface waters exist between the application site and identified Natura 2000 sites. This NIS was updated following a Request for Additional Information that was issued by South Dublin County Council.

The purpose of this NIS was to determine the appropriateness of the proposed project, in the context of the conservation status of the site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises an assessment of the plan or project and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

1.2 THE AIM OF THE REPORT

This Natura Impact Statement (NIS) has been prepared in accordance with the current guidance (DoEHLG, 2009, Revised February 2010). An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated.

Accordingly, a comprehensive assessment of the potential impacts of this application on Natura 2000 sites was carried out in November 2024 by Noreen McLoughlin, MSc, MCIEEM of Whitehill Environmental. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed development to be identified and it also enabled potential ecological impacts associated with the proposed development to be assessed and mitigated for.

1.3 REGULATORY CONTEXT

RELEVANT LEGISLATION

The Birds Directive (Council Directive2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conversation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2027 and that status does not deteriorate in any waters.

Appropriate Assessment and the Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats

Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

"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."

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U(1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

'(1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed development is given.'

The competent authority shall determine that an Appropriate Assessment is not required if it can be excluded, that the proposed development, individually or in combination with other plans or project will have a significant effect on a European site.

Where the competent authority cannot exclude the potential for a significant effect on a European site, an Appropriate Assessment shall be deemed required.

Where an Appropriate Assessment is required, the conclusions of the Appropriate Assessment Report (Natura Impact Statement (NIS)) should enable the competent authority to ascertain whether the plan or proposed development would adversely affect the integrity of the European site. If adverse impacts on the integrity of a European site cannot be avoided, then mitigation measures should be applied during the appropriate assessment process to the point where no adverse impacts on the site remain. Under the terms of the Habitats Directive

consent can only be granted for a project if, as a result of the appropriate assessment either (a) it is concluded that the integrity of any European sites will not be adversely affected, or (b) after mitigation, where adverse impacts cannot be excluded, there is shown to be an absence of alternative solutions, and there exists imperative reasons of overriding public interest for the project should go ahead.

Section 177(V) of the Planning and Development Act 2000 (as amended) outlines that the competent authority shall carry out the Appropriate Assessment, taking into account the Natura Impact Statement (amongst any other additional or supplemental information). A determination shall then be made by the competent authority in line with the requirements of Article 6(3) of the Habitats Directive as to whether the plan or proposed development would adversely affect the integrity of a European site, prior to consent being given.

2 METHODOLOGY

2.1 APPROPRIATE ASSESSMENT

This NIS has been prepared with reference to the following:

- European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2021). Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.
- The AA has also been undertaken in consideration of the European Union (CJEU) judgment on Case C323/17 (People over Wind, Peter Sweetman v Coillte Teoranta), which concluded that "it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site.". Other caselaw relevant to Screening are Waddenzee (C127/02), Holohan and Others v An Bord Pleanála (C461/17) and Court of Appeal case C1/2009/0041/QBACF Citation No [2009] EWCA Civ. 1061.

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that "each stage determines whether a further stage in the process is required". Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: Appropriate Assessment – The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: **Assessment where no alternative solutions exist and where adverse impacts remain –** An assessment of the 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.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects;
- Description of proven mitigation measures.

2.2 STATEMENT OF COMPETENCY

This NIS was carried out by Noreen McLoughlin, BA, MSc, MCIEEM. Noreen has an honours degree in Zoology and an MSc in Freshwater Ecology from Trinity College, Dublin and she has been a full member of the Chartered Institute of Ecology and Environmental Management for over nineteen years. Noreen has over 21 years' experience as a professional ecologist in Ireland. Noreen has recently completed an Advanced Diploma in Environmental and Planning Law from King's Inns, Dublin (2024).

2.3 DESK STUDIES & CONSULTATION

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - Aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species, conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;
- Myplan.ie – Mapped based information;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- Bing maps & Google Street View – High quality aerials and street images;
- JFOC Architects – Plans and information pertaining to the development;
- South Dublin City Council – Information on planning history in the area for the assessment of cumulative impacts.

2.4 FIELD BASED STUDIES

The application site at Ballycullen has been visited by Whitehill Environmental on three occasions as part of three separate planning application processes.

An initial visit to the site of the proposed application at Ballycullen was undertaken on October 26th 2017 when field notes, species lists and photographs were taken. Subsequent visits to the site were undertaken in May 5th 2021 and October 18th 2024 to update this work and to ascertain if any changes in the habitats on the site had arisen in the intervening time. The site was surveyed in accordance with the Heritage Council's Habitat Survey Guidelines (Smith et al., 2010) and the Institute of Environmental Assessment's Guidelines for Baselines Ecological

Assessment (IEA, 1995). Habitats within the application site were classified in accordance to Level 3 of A Guide to Habitats in Ireland (Fossit, 2000). These habitats are denoted in the text along with their habitat code, e.g., the habitat code for improved agricultural grassland is GA1. A species list was compiled and target notes were made. Mammal and bird activity was also noted. The species nomenclature for vascular plants conforms with The New Flora of the British Isles' (Stace, 2010).

Bat and badger surveys were carried out by Brian Keeley of Wildlife Surveys Ireland in 2024, whilst breeding bird surveys were also carried out in the summer of 2025 by Hugh Delaney, Ornithologist.

2.5 ASSESSMENT METHODOLOGY

The proposed development was assessed to identify its potential ecological impacts and from this, the Zone of Influence (ZoI) of the proposed development was defined. Based on the potential impacts and their ZoI, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

As defined in the Habitat's Directive, 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 specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;

The favourable conservation status of a species is achieved when:

- The population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future;

- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCOs should be considered in detail.

3 SCREENING

3.1 DEVELOPMENT DESCRIPTION

Lagan Homes Ballycullen Limited intend to make a planning application for planning permission for a Large Scale Residential Development (LRD) in the townland of Woodtown, Ballycullen, Dublin 16. The lands are located to the east of Abbots Grove Park, south-east of Abbots Grove Avenue, south of Stocking Avenue and Stocking Wood estate, and west of White Pines Park.

The proposed development will consist of 494 no. residential units (108no. 1-bed, 168no. 2-bed, 160 no. 3-bed; 58 no. 4-bed) comprising 189no. 2 storey houses (terraced/semi-detached/detached) (17no. 2-bed, 114no. 3-bed; 58no. 4-bed) and 305no. apartments (108no. 1-bed apartments, 151no. 2-bed apartments, 46no. 3-bed apartments). The proposed development also includes a crèche (c.475sq.m), public open space, car parking (surface/undercroft), bicycle parking, bicycle storage structures and lockers, bin stores, and 8no. ESB substations. Vehicular access to be provided from the existing spur road connection to Stocking Avenue to the west of the site, and via Stocking Wood Drive to the east of the site (with relocation of existing ESB substation and associated works to the existing hammerhead). Additional pedestrian only routes will be provided into Abbot's Grove Park and Stocking Wood Copse with future connections provided for into Stocking Wood Manor, White Pines Park and the future school site to the north of the application site. The proposed development includes all associated site development works (including site reprofiling, retaining structures and downing of ESB overhead lines), landscaping, boundary treatments and services provision.

An extract from the planning drawings can be seen in Figure 1.

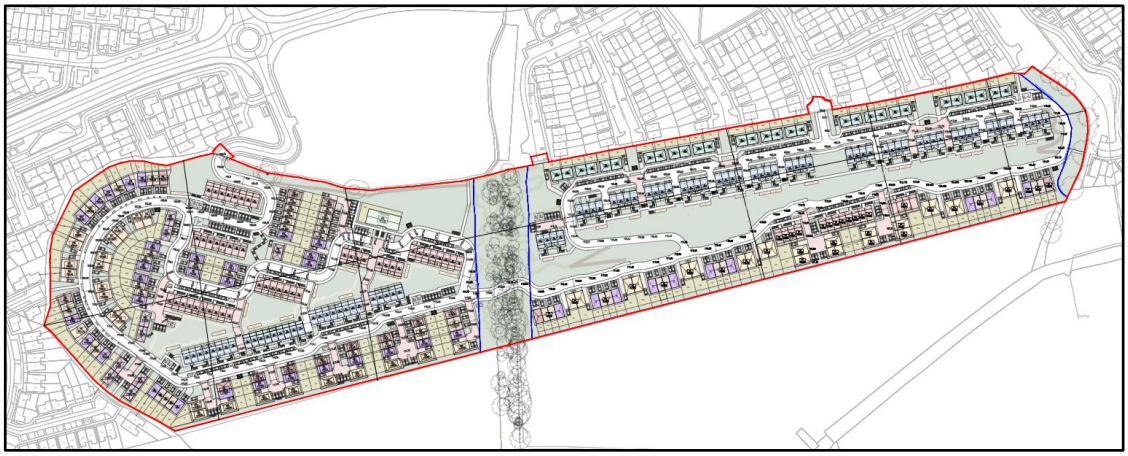


Figure 1 – Extract from Planning Drawing (as prepared by JFOC Architects)

Foul Water

An engineering report for the proposed development has been prepared by Waterman Moylan Consulting Engineers Ltd. This outlines the proposed foul water drainage situation. There is an existing 225mm diameter foul sewer constructed in the spur road adjacent to Abbot Grove development on the west side of the site. This 225mm sewer connects to an existing 450mm diameter sewer north of Stocking Avenue.

It is proposed to provide a gravity system which will discharge to the existing foul water infrastructure north of the subject site at 2 No. locations. A Pre-Connection Enquiry form was submitted to Uisce Éireann on 26/01/2024 for 400 units which outlined the proposals for the drainage of wastewater from the development. Uisce Éireann responded with the Confirmation of Feasibility (COF) on 12/02/2024, with reference no. CDS24000704. A revised Pre-Connection Enquiry form was submitted to Uisce Éireann on 06/12/2024 for 505 No. houses and 1 No. creche and a COF with reference number CDS24010539 was received from Uisce Éireann on 05/03/2025 which further confirmed that the foul connection is feasible without infrastructure upgrades.

Proposed Surface Water Drainage

Details on the proposed surface water drainage have also been presented in the report prepared by Waterman Moylan Consulting Engineers Ltd. The proposed surface water drainage network will comply with the GDSDS Regional Drainage Policies Volume 2, for New Developments. The following documents have also been considered in preparing the surface water drainage strategy for the development:

- South Dublin County Council 2022-2028 Development Plan
- Sustainable Drainage Explanatory Design and Evaluation Guide 2022
- CIRIA SuDS Manual (C753)

Sustainable Urban Drainage Systems (SUDS) have been developed and are in use to alleviate the detrimental effects of traditional urban stormwater drainage practices that typically consist of piping run-off of rainfall from developments to the nearest receiving watercourse. Surface water drainage methods that take account of quantity, quality and amenity issues are collectively referred to as SUDS. They are typically made up of one or more structures, built to manage surface water run-off. The use of SUDS to control runoff also provides the additional benefit of reducing pollutants in the surface water by settling out suspended solids, and in some cases providing biological treatment.

A stormwater management or treatment train approach assures that run-off quantity and quality are improved. The following objectives of the treatment train provide an integrated and balanced approach to help mitigate the changes in stormwater run-off flows that occur as land is urbanised and to help mitigate the impacts of stormwater quality on receiving systems:

1) Source control: conveyance and infiltration of run-off; and

2) Site Control: reduction in volume and rate of surface run-off, with some additional treatment provided.

It is proposed that the surface water runoff for the development will be intercepted, collected, slowed, and attenuated through the use nature-based rainwater management and sustainable urban drainage systems (SuDS). The SuDS for this subject site are summarised below:

- Permeable paving below parking spaces
- Rain gardens and bio-retention tree pits within strategically located landscaped areas
- Above-ground detention basins located in open green space areas
- Green roof systems on duplex/apartment blocks
- Roadside swales and a filter drain
- Hydrobrakes fitted downstream of the attenuation area basins

The proposed SUDS interventions have been implemented to ensure runoff is treated to the standards outlined in the Greater Dublin Strategic Drainage Study and to add value to the biodiversity potential of the development.

Following the Request for Additional Information, the proposed Surface Water Drainage Strategy was re-evaluated to consider the concerns of South Dublin County Council with regards to the design of the proposed SUDS measures.

The drainage design has been updated, limiting the depth of detention basins to 1m and introducing ponds which are up to 2m in depth with a 500mm permanent water level. The detention basins have been designed with a 1 in 4 slope on at least one side so that they can be maintained, in line with the SDCC Guidelines. The ponds will be provided with a railing and walkway to protect the steep embankments where required.

Where the attenuation volumes allow, the discharge from the detention basins will be through a mesh basket on the bank of the detention basins. Furthermore, the discharge location from all ponds will be on the bank. Where possible, the incoming pipe will be on the opposite side of the detention basin to the outflow, allowing maximum opportunity for surface water run-off to be treated and absorbed or allow for evapotranspiration to take place prior to being discharged from the SUDS Component.

Petrol interceptors are not proposed as part of the proposed SUDS design. All surface water from the proposed roads will pass through at least one forms of SUDS prior to being discharged to the stream or public sewer.

3.2 SITE LOCATION AND SURROUNDING ENVIRONMENT

The site in question is approximately 10.35 hectares acres in area. It is located in Ballycullen, approximately 1.2km south of Knocklyon and 1.6km south-east of Firhouse. Access to the site will be via Stocking Avenue and Abbott Grove to the north of the site. Site location maps can be seen in Figures 2 and 3. The site is zoned as a residential area by South Dublin County Council (Zoning: Res-N), i.e., to provide for new residential communities in accordance with approved area plans.

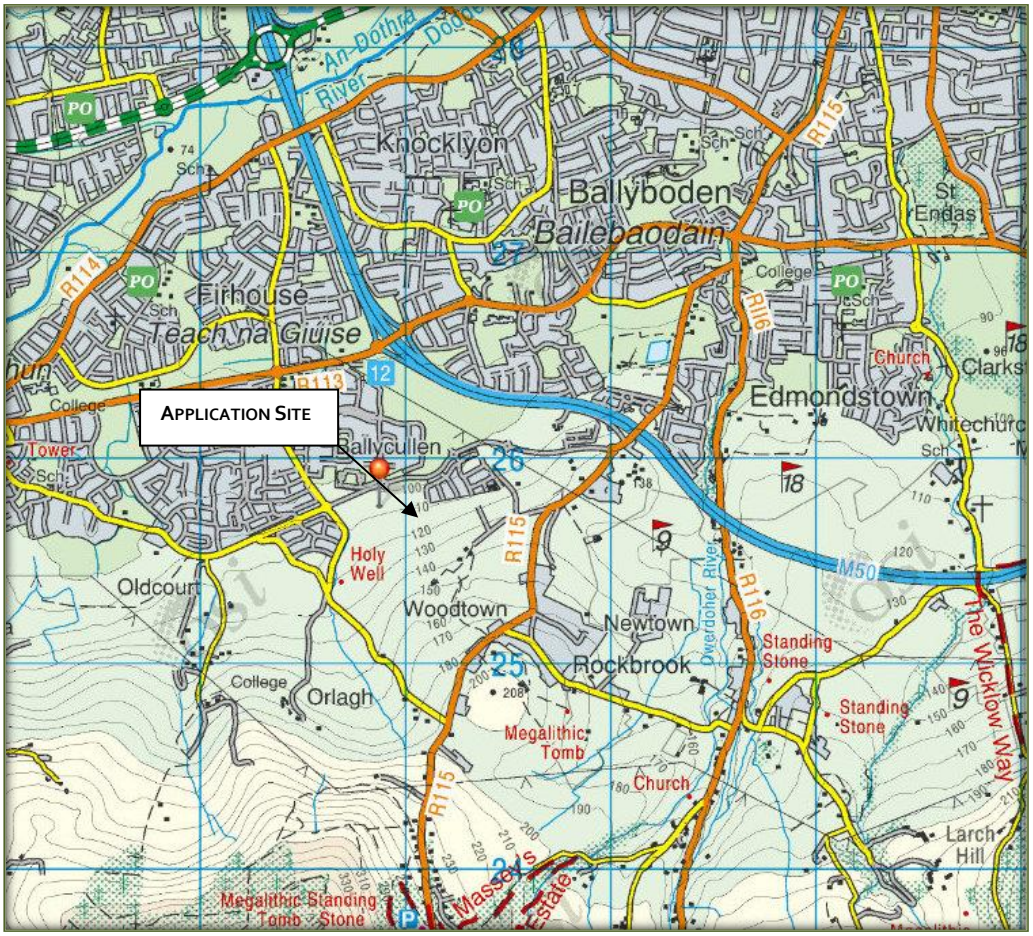


Figure 2 – Site Location Map

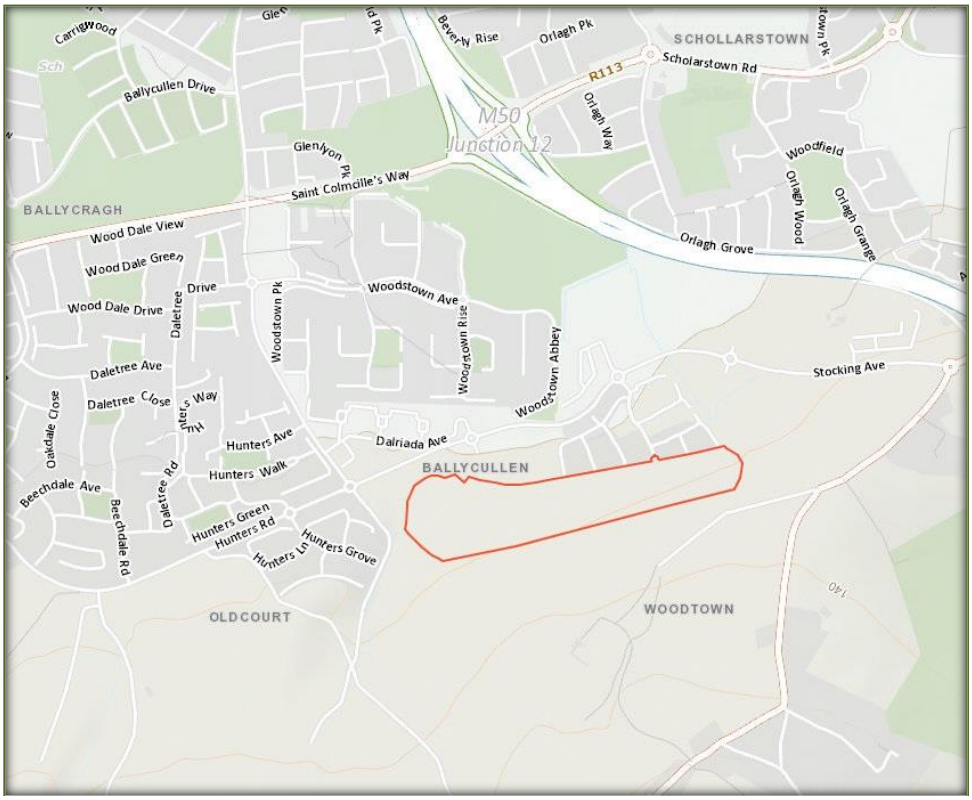


Figure 3 – Site Location Map. Application Site is Outlined in Red

The main land uses surrounding the site include the residential and amenity areas to the north and east of the site, whilst agriculture is the main land use to the south of the site. The habitats associated with these areas include buildings and artificial surfaces, amenity grasslands and gardens and improved agricultural grasslands. An overview of the local habitats surrounding the application site can be seen in the aerial photograph in Figure 4.

Figure 4 – Aerial Photograph Showing Habitats Surrounding the Site

HABITATS WITHIN THE STUDY AREA

No part of the site lies within any area that is designated for nature conservation purposes. All proposed development works within the application site will take place on areas of low - high biodiversity value on a local level. The natural habitats within the study area are limited and mainly consist of improved agricultural grassland habitats (GA1), hedgerows (WL1), treelines (WL2) and woodland. These features are described in greater detail below.

Improved Agricultural Grassland (GA1)

This is the dominant habitat within the application site and it is currently used for grass production and grazing. There are two distinct areas of this habitat on the site. In the west of the site (west of the woodland dissecting the site) this habitat is quite improved, with very low biodiversity. It is dominated by rye grass (*Lolium* sp). On the eastern site of the woodland dissecting the site, the habitat here is more variable. This field is being grazed by horses. Whilst it can still be described in the improved agricultural grassland category it is less intensively managed and biodiversity is slightly higher. Species recorded are typical of this habitat and included Cock's foot grass *Dactylorisa* as well as creeping buttercup *Ranunculus repens*, meadow buttercup *Ranunculus acris*, clovers *Trifolium* sp., common chickweed *Stellaria media* and ragwort *Senecio jacobaea*.

Along the un-mown and under-grazed verges of this habitat that are adjacent to the hedgerows and treelines, species such as nettles *Urtica diocia*, germander speedwell *Veronica chamaedrys*, cleavers *Galium aparine* and brambles *Rubus fructicosus* are all common.

Evaluation: This improved agricultural grassland habitat is of low biodiversity value overall and is of no ecological value.

Treelines (WL2) and Hedgerows (WL1)

Fossit defines the treeline (WL2) as a narrow row or single line of trees that is greater that 5m in height that typically occurs along field or property boundaries. A hedgerow is generally considered to be less than 5m in height and 4m wide. Prior to the development of the lands adjacent to the application site, treelines and hedgerows would have formed an important natural feature of the site. However, many have been removed to facilitate developments adjacent to the applicant site since the capturing of the most recent aerial images available. The hedgerow / treeline forming the western and northern boundaries of the site were removed during the development of the residential estate and replaced by a wooden fence.

The only remaining treeline habitat currently within the application site is a small section occurring along the eastern site boundary. The dominant species within this treeline is sessile

oak *Quercus petraea*, whilst beech *Fagus sylvatica* and sycamore *Acer pseudoplantatus* also common.

Evaluation: The majority of the original treeline and hedgerow habitats within the site have been lost to facilitate developments adjacent to the site. The remaining treeline along the eastern perimeter is dominated by native oaks and this could be considered of high local importance.

Scrub (WS1)

Fossit describes scrub as an area that is dominated by at least 50% cover of shrubs, stunted trees or brambles, with a canopy height of less than 5m. There is a small area of scrub within the application site along the western boundary of the site. It has colonised an area of previous hedgerow growth. The dominant species in the habitat is bramble, with the occasional hawthorn *Crataegus monogyna* and ash *Fraxinus excelsior*. Along the northern site boundaries where the back gardens of the residential dwellings on Stocking Wood back on to the site, there are some small pockets of scrub, containing willow, bramble and buddlia.

Evaluation: Biodiversity within the scrub habitat is low, although it does provide some suitable nesting sites and foraging opportunities for small birds and mammals.

Oak-Birch-Holly Woodland WN1

This is the most notable ecological feature within the application site and it bisects the site from north to south. Fossit describes this habitat as "native, semi-natural broadleaved woodland that occurs on acid or base-poor soils that may be either dry or humid but not waterlogged". Sessile oak *Quercus petraea* is the dominant tree in this habitat. Non-native beech *Fagus sylvatica* and sycamore *Acer pseudoplantatus* are also common, but they are not the dominant feature. The understory of this habitat is dominated by holly *Ilex aquifolium*. Hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa* are occasional. Honeysuckle *Lonicera periclymenum* was frequently observed growing around the tree trunks and in the shrubby species of the understory. Other tree / shrub species recorded included downy birch *Betula pubescens*, dog rose *Rosa canina* and gorse *Ulex europaeus*.

The herbaceous ground flora of this habitat was limited, possibly due to trampling and grazing by cattle and sheep. Species recorded include wood avens *Geum urbanum*, vetches *Vicia* sp, germander speedwell *Veronica chamaedrys* and self heal *Prunella vulgaris*.

Evaluation: Although this habitat has a limited ground flora and non-native tree species are common (beech), this habitat is a valuable ecological feature in the site and it is considered to

be of medium/higher biodiversity value on a local level. Both in its own right and as it provides an important ecological corridor for birds, bats and other mammals. There is a small, woodland south of the farm (Woodtown House) that is south of the site and so the woodland within the application site would provide an important corridor to this other woodland habitat.

Depositing/Lowland Rivers FW2

This habitat category refers to watercourses where fine sediments are deposited on the river bed. There are two small streams within the application site – one on the eastern side of the woodland within the site and there is also one on the eastern site boundary. These streams are both narrow and shallow and both have an accumulation of sediment and leaf detritus. A discussion on the water quality in these streams is presented in the Water Quality section.

Evaluation: All watercourses can be considered to be of high ecological value and locally / regionally important.

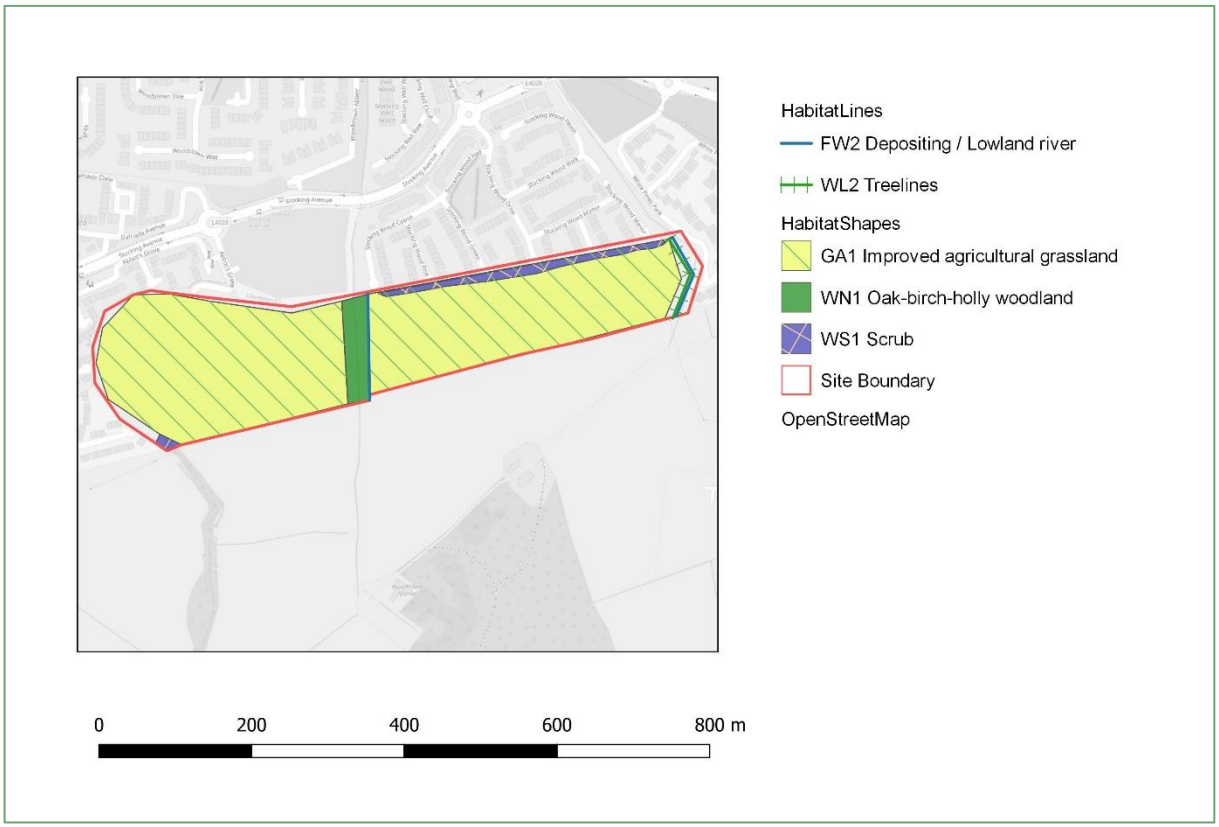


Figure 5 – Map Showing Main Habitats within the Site

WATER FEATURES AND QUALITY

The application site lies within the Eastern River Basin District, the Liffey and Dublin Bay Hydrometric Area/Catchment, the Dodder Sub-Catchment and Sub-Basin. There is a small stream flowing along the eastern side of the woodland that bisects the site. There is also a stream flowing along the eastern perimeter of the site. Both these flow in a northerly direction. These streams are not mapped by the EPA but it is likely that they are eventual tributaries of the Orlagh Stream, which is a tributary of the Dodder. The confluence of the Orlagh Stream and the River Dodder is 2km north of the application site.

The EPA have classified the ecological status of the Orlagh Stream and its tributaries as moderate. The River Dodder has also been classed as moderate for its entire length. As part of the field work from this application site, a quick examination of the invertebrates of the stream in the middle of the site was undertaken using a hand held sweep net and a two minute kick sample. The stream bed was dominated by silt. The dominant taxon observed in the sample was the amphipod *Gammarus*, which is relatively tolerant of organic pollution. As this species was dominant, an EPA Q rating of 3 was applied, indicating that this stream is also of moderate ecological status. Under the requirements of the Water Framework Directive, this is unsatisfactory. Ireland is obliged to achieve good ecological status in all its water bodies by 2021.

3.3 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the proposed development have been identified and described according to their site synopses, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the proposed development and activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway

and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

There are thirteen Natura 2000 designated sites within 15km of the application site. These designated areas and their closest points to the application site are summarised in Table 1 and a map showing their locations relative to the application site is shown in Figure 6. A full description of all these sites can be read on the website of the National Parks and Wildlife Service (npws.ie).

Site Name & Code	Distance	Qualifying Interests	Screened In - Out
Glenasmole Valley SAC 001209	3km south-west	• Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) • Petrifying springs with tufa formation (Cratoneurion)	*Screened Out - This SAC is in the upper reaches of the Dodder sub-catchment. It is not hydrologically connected to the application site, therefore significant effects upon this site can be ruled out.*
Wicklow Mountains SAC 002122	3.9km south-east	• Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) • Natural dystrophic lakes and ponds • Northern Atlantic wet heaths with *Erica tetralix* • European dry heaths • Alpine and Boreal heaths • Calaminarian grasslands of the Violetalia calaminariae • Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) • Blanket bogs (* if active bog) • Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani • Calcareous rocky slopes with chasmophytic vegetation • Siliceous rocky slopes with chasmophytic vegetation • Old sessile oak woods with Ilex and Blechnum in the British Isles • *Lutra lutra* (Otter)	*Screened Out - There is no hydrological connectivity between the application site and this SAC, therefore significant effects upon this site can be ruled out.*

Wicklow Mountains SPA 004040	4.1km south	• Merlin (*Falco columbarius*) • Peregrine (*Falco peregrinus*)	*Screened Out - There is no hydrological connectivity between the application site and this SPA, therefore significant effects upon this site can be ruled out.*
South Dublin Bay SAC 000210	8.9km north-east	• Mudflats and sandflats not covered by seawater at low tide • Annual vegetation of drift lines • Salicornia and other annuals colonising mud and sand • Embryonic shifting dunes	*Screened In - The application site is adjacent to a stream which is a tributary of the River Dodder, which eventually flows into Dublin Bay. This SAC is approximately 16km downstream of the of the application site. Significant effects arising from run-off into this stream during construction and operation are uncertain and will be considered further*
Knocksink Wood SAC 000725	9.3km south-east	• Petrifying springs with tufa formation (Cratoneurion) • Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	*Screened Out - There is no hydrological connectivity between the application site and this SAC, therefore significant effects upon this site can be ruled out.*
South Dublin Bay and River Tolka Estuary SPA 004024	10km north-east	• Light-bellied Brent Goose (*Branta bernicla hrota)* • Oystercatcher (*Haematopus ostralegus*) • Ringed Plover (*Charadrius hiaticula*) • Grey Plover (*Pluvialis squatarola)* • Knot *(Calidris canutus)* • Sanderling *(Calidris alba)* • Dunlin *(Calidris alpina)* • Bar-tailed Godwit *(Limosa lapponica)* • Redshank *(Tringa totanus)* • Black-headed Gull *(Chroicocephalus ridibundus)* • Roseate Tern *(Sterna dougallii)* • Common Tern *(Sterna hirundo)* • Arctic Tern *(Sterna paradisaea)* • Wetland and Waterbirds	*Screened In - The application site is adjacent to a stream which is a tributary of the River Dodder, which eventually flows into Dublin Bay. This SPA is approximately 16km downstream of the of the application site. Significant effects arising from run-off into this stream during construction and operation are uncertain and will be considered further*
Ballyman Glen SAC 000713	12.3km south	• Petrifying springs with tufa formation • Alkaline fens	*Screened Out - There is no hydrological connectivity between the application site and this SAC, therefore significant effects upon this site can be ruled out.*

North Dublin Bay SAC 000206	13.6km north-east	• Mudflats and sandflats not covered by seawater at low tide • Annual vegetation of drift lines • Salicornia and other annuals colonising mud and sand • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) • Mediterranean salt meadows (*Juncetalia maritimi*) • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) • Fixed coastal dunes with herbaceous vegetation (grey dunes) • Humid dune slacks • *Petalophyllum ralfsii* (Petalwort)	*Screened In - The application site is adjacent to a stream which is a tributary of the River Dodder, which eventually flows into Dublin Bay. This SAC is approximately 16km downstream of the of the application site. Significant effects arising from run-off into this stream during construction and operation are uncertain and will be considered further*
North Bull Island SPA 004006	13.6km north-east	• Light-bellied Brent Goose (*Branta bernicla hrota)* • Shelduck (*Tadorna tadorna*) • Teal (*Anas crecca*) • Pintail (*Anas acuta*) • Shoveler (*Anas clypeata*) • Oystercatcher (*Haematopus ostralegus)* • Golden Plover (*Pluvialis apricaria*) • Grey Plover (*Pluvialis squatarola*) • Knot (*Calidris canutus*) • Sanderling (*Calidris alba*) • Dunlin (*Calidris alpina*) • Black-tailed Godwit (*Limosa limosa)* • Bar-tailed Godwit (*Limosa lapponica)* • Curlew (*Numenius arquata*) • Redshank (*Tringa totanus*) • Turnstone (*Arenaria interpres*) • Black-headed Gull (*Chroicocephalus ridibundus*) • Wetland and Waterbirds	*Screened In - The application site is adjacent to a stream which is a tributary of the River Dodder, which eventually flows into Dublin Bay. This SPA is approximately 16km downstream of the of the application site. Significant effects arising from run-off into this stream during construction and operation are uncertain and will be considered further*
North-West Irish Sea SPA 004236	13.8km north-east	• Common Scoter (Melanitta nigra) • Red-throated Diver (*Gavia stellata)* • Great Northern Diver (*Gavia immer)* • Fulmar (*Fulmarus glacialis*) • Manx Shearwater (*Puffinus puffinus)* • Shag (*Phalacrocorax aristotelis*) • Cormorant (*Phalacrocorax carbo*) • Little Gull (*Larus minutus*) • Kittiwake (*Rissa tridactyla*) • Black-headed Gull (*Chroicocephalus ridibundus*) • Common Gull (*Larus canus*)	*Screened In - The application site is adjacent to a stream which is a tributary of the River Dodder, which eventually flows into Dublin Bay. This SPA is approximately 16km downstream of the of the application site. Significant effects arising from run-off into this stream during construction and operation are uncertain and will be considered further*

		• Lesser Black-backed Gull (*Larus fuscus*) • Herring Gull (*Larus argentatus*) • Great Black-backed Gull (*Larus marinus)* • Little Tern (*Sterna albifrons*) • Roseate Tern (*Sterna dougallii*) • Common Tern (*Sterna hirundo*) • Arctic Tern (*Sterna paradisaea*) • Puffin (*Fratercula arctica*) • Razorbill (*Alca torda*) • Guillemot (*Uria aalge*)	
Poulaphouca Reservoir SPA 004063	14.7km south-west	• Greylag goose *Anser anser* • Lesser black-backed gull *Larus fuscus*	*Screened Out - There is no hydrological connectivity between the application site and this SPA, therefore significant effects upon this site can be ruled out.*
Dalkey Island SPA 004172	14.6km east	• Roseate Tern (*Sterna dougallii)* • Common Tern *(Sterna hirundo)* • Arctic Tern *(Sterna paradisaea)*	*Screened Out - No direct hydrological connectivity, therefore potential significant effects can be ruled out.*
Rockabill to Dalkey Island * SAC 003000	14.9km east	• Reefs • Phocoena phocoena *(Harbour Porpoise)*	*Screened Out - No direct hydrological connectivity, therefore potential significant effects can be ruled out.*

Table 1 – Natura 2000 Sites Within 15km of the Proposed Site

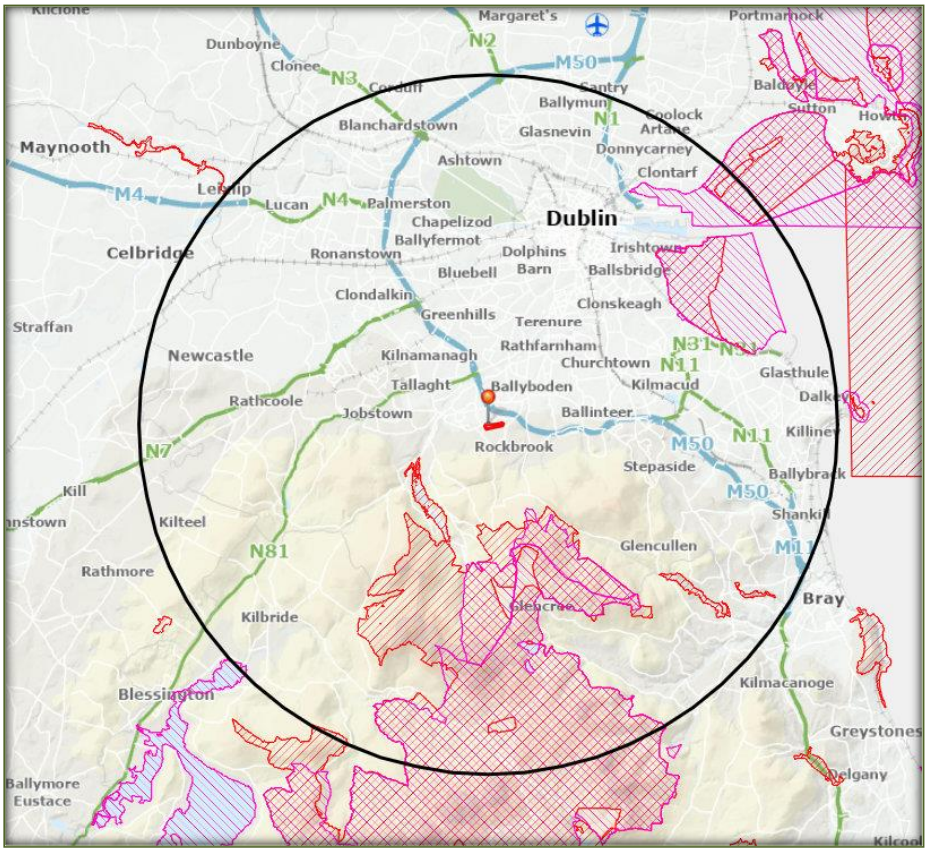


Figure 6 – The Application Site (Pinned) in relation to the Natura 2000 Sites (SACs – Red Hatching; SPAs – Pink Hatching). 15km Boundary Shown.

3.4 IDENTIFICATION OF POTENTIAL EFFECTS

The proposed development site at Ballycullen is hydrologically connected to the five Natura 2000 sites associated with Inner Dublin Bay, i.e., South Dublin Bay / River Tolka Estuary SPA, the South Dublin Bay SAC, North Bull Island SPA, the North-West Irish Sea SPA and North Dublin Bay SAC. This hydrological connectivity is provided via the watercourses that are on site which eventually lead to the River Dodder, which flows into Dublin Bay near Ringsend. These sites are approximately 16km downstream of the application site. Given this hydrological separation distance, significant negative effects upon these sites are unlikely but cannot be ruled out with certainty.

In accordance with the tenets of the precautionary principle and in the absence of mitigation, an accidental pollution event which might occur during the construction or operation or the proposed development, either alone or in-combination with other developments, could potentially affect the water quality in the watercourses within the site. These streams lead to the River Dodder, which eventually flows into Dublin Bay. Therefore, in light of this uncertainty, coupled with the fact that mitigation measures are required to protect the water quality of the watercourse in the site, a Natura Impact Statement was prepared for the development.

3.5 ASSESSMENT OF SIGNIFICANCE

This section considers the list of sites identified in Section 3.3. It can be considered that all sites with the exception of those of Inner Dublin Bay can be ruled out as significant effects upon these sites will not occur as they are not directly hydrologically connected to the site. The AA will now focus on the following five sites and the potential impacts and significant effects that may arise on these:

- South Dublin Bay / River Tolka Estuary SPA
- North Bull Island SPA
- North-West Irish Sea SPA
- South Dublin Bay SAC and
- North Dublin Bay SAC

3.6 SCREENING CONCLUSIONS

The proposed development is not directly connected with or necessary to the nature conservation management of the designated site. Therefore, following consideration of the location of the Natura 2000 sites of Inner Dublin Bay in relation to the proposed development at Ballycullen and the potential impacts that may occur, this project must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

4 STAGE II – APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the development of the proposed planning application at Ballycullen (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Natura 2000 sites identified with respect to these site's structures, species, functions and/or conservation objectives. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this application, should it receive consent.

SITE SPECIFIC CONSERVATION OBJECTIVES

For the five sites that have been screened in, if Site Specific Conservation Objectives were available these were reviewed in light of the proposed development and the potential impacts that might occur. These Site Specific Conservation Objectives (SSCOs) aim to define the favourable conservation condition for the particular habitats or species at that site. They outline certain attributes (e.g., distribution, population structure, water quality) for different species and habitats with targets, which define favourable condition for a habitat or species at a particular site. The maintenance of habitats and species within the Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level. Where available, these SSCOs can be downloaded on the NPWS website. Any potential threats to the attributes and targets as defined in these SSCOs were assessed and where necessary, mitigated for. Where SSCOS were not available, then the SSCOs of other Natura 2000 sites with comparable QIs were referred to.

For each Qualifying Interest of the SAC, the specific conservation objective is either to *maintain or restore* the favourable conservation condition of that interest, by defining a list of attributes and targets which are indicative of the conservation status of that interest. For habitats, the main attributes include habitat area; habitat and community distribution; vegetation structure/composition and physical structure. The main target is to ensure that the habitats are stable or increasing in area and that the other attributes are maintained or restored. For the Annex II species of the SAC, the main attributes are population trend and distribution, whilst the targets aim to ensure that the long term population trends of the species are stable or increasing and that there is no significant decrease in the numbers or range of areas used by the species, other than that occurring from natural patterns of variation.

4.2 NATURA 2000 SITES IDENTIFIED

SOUTH DUBLIN BAY / RIVER TOLKA ESTUARY SPA 004024

Site 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. It is a regular autumn roosting ground for significant numbers of terns, including *Sterna dougallii, S. hirundo* and *S. paradisaea*.

The full NPWS site synopsis for this site is available online at npws.ie.

In the Natura 2000 data form for this site, the negative threats and pressures on this site are listed as follows:

- D01.02 - Roads, motorways (medium rank)
- E01 - Urbanised areas; human habitation (high rank)
- E02 - Industrial and commercial areas (high rank)
- E03 – Discharges (high rank)
- F02.03 - Leisure fishing (medium rank)
- F02.03.01 - Bait digging, collection (medium rank)
- G01.01 - Nautical sports (medium rank)

- G01.02 - Walking, horse-riding and non-motorised vehicles (high rank)
- J02.01.02 - Reclamation of land from sea, estuary and marsh (high rank)
- K02.03 - Eutrophication (natural) (medium rank)

Site Specific Conservation Objectives

The NPWS Conservation Interests of the South Dublin Bay / River Tolka Estuary SPA 004024 and their Site Conservation Condition in this SPA (NPWS, 2015) are presented in Tables 2 and 3:

Qualifying Interest	SSCO
Light-bellied Brent Goose *Branta bernicla hrota*	Maintain
Oystercatcher *Haematopus ostralegus*	Maintain
Ringed Plover *Charadrius hiaticula*	Maintain
Grey Plover *Pluvialis squatarola*	No SSCO – Species set for Removal as a QI
Knot *Calidris canutus*	Maintain
Sanderling *Calidris alba*	Maintain
Dunlin *Calidris alpina*	Maintain
Bar-tailed Godwit *Limosa lapponica*	Maintain
Redshank *Tringa totanus*	Maintain
Black-headed Gull *Chroicocephalus ridibundus*	Maintain
Roseate Tern *Sterna dougallii*	Maintain
Common Tern *Sterna hirundo*	Maintain
Arctic Tern *Sterna paradisaea*	Maintain
Wetland and Waterbirds	Maintain

Table 2 – SSCOs for the South Dublin Bay / River Tolka Estuary SPA

The objectives for all these bird species (with the exception of the tern species) are the same and are presented in Tables 3a-3c.

Attribute	Measure	Target
Population trend	Percentage Change	Long term population trend stable or increasing
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by the QI, other than that occurring from natural patterns of variation

Table 3a – Attributes, Measures and Targets for the South Dublin Bay / River Tolka Estuary SPA

The SSCOS for the three tern species include:

Attribute	Measure	Target
Passage population: individuals	Number	No significant decline
Distribution: roosting areas	Number; location; area (ha)	No significant decline
Prey biomass available	Kg	No significant decline
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the number of roseate tern/common tern/artic tern among the post-breeding aggregation of terns.
Breeding population abundance: apparently occupied nests	Number	No significant decline
Productivity rate: fledged young per breeding pair	Mean number	No significant decline
Passage population: Individuals	Number	No significant decline
Distribution: breeding colonies	Number; location; area (ha)	No significant decline
Prey biomass available	Kg	No significant decline
Barriers to connectivity	Number; location; shape; area (ha)	No significant increase
Disturbance at the breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population

Table 3b – Attributes, Measures and Targets for the South Dublin Bay / River Tolka Estuary SPA (Tern Species)

The SSCOS for the wetlands are:

Attribute	Measure	Target
Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587ha, other than that occurring from natural patterns of variation.

Table 3c – Attributes, Measures and Targets for Wetlands in South Dublin Bay / River Tolka Estuary SPA

NORTH BULL ISLAND SPA 004006

Site 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 bernicila 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

The full NPWS site synopsis for this site is available online at npws.ie.

In the Natura 2000 data form for this site, the negative threats and pressures on this site are listed as follows:

- D01.02 - Roads, motorways (medium rank)
- D01.05 – Bridges, viaducts (high rank)
- D03.02 – Shipping lanes (medium rank)
- E01.01 – Continuous urbanisation (medium rank)
- E01.04 – Other patterns of habitation (low rank)
- E02 - Industrial and commercial areas (medium rank)
- E03 – Discharges (medium rank)
- F02.03.01 - Bait digging, collection (medium rank)
- G01.01 - Nautical sports (medium rank)
- G01.02 - Walking, horse-riding and non-motorised vehicles (high rank)
- G02.01 – Golf course (medium rank)

Site Specific Conservation Objectives

The NPWS Conservation Interests of the North Bull Island SPA 004006 and their Site Conservation Condition in this SPA (NPWS, 2015) are presented in Table 4:

Qualifying Interest	SSCO
Light-bellied Brent Goose *Branta bernicla hrota*	Maintain
Shelduck Tadorna *tadorna*	Maintain
Teal *Anas crecca*	Maintain
Pintail *Anas acuta*	Maintain
Shoveler *Anas clypeata*	Maintain
Oystercatcher *Haematopus ostralegus*	Maintain
Golden Plover Pluvialis apricaria	Maintain
Grey Plover *Pluvialis squatarola*	Maintain
Knot *Calidris canutus*	Maintain
Sanderling *Calidris alba*	Maintain
Dunlin *Calidris alpina*	Maintain
Black-tailed Godwit *Limosa limosa*	Maintain
Bar-tailed Godwit *Limosa lapponica*	Maintain
Curlew *Numenius arquata*	Maintain
Redshank *Tringa totanus*	Maintain
Turnstone *Arenaria interpres*	Maintain
Black-headed Gull *Chroicocephalus ridibundus*	Maintain
Wetland and Waterbirds	Maintain

Table 4 – SSCOs for the North Bull Island SPA

The attributes, measures and targets for all these bird species are the same as that listed for the QIs of the South Dublin Bay / River Tolka Estuary SPA and these were listed in Table 4a. The attributes, measures and targets for the wetlands are also the same as the South Dublin Bay / River Tolka Estuary SPA (Table 4c).

NORTH-WEST IRISH SEA SPA 004080

Site Summary

The North-West Irish Sea has been recently designated for the protection of birds along the north-eastern coast. The estuaries and bays that open into it along with connecting coastal stretches of intertidal and shallow subtidal habitats, provide safe feeding and roosting habitats for waterbirds throughout the winter and migration periods. These areas, along with more pelagic marine waters further offshore, provide additional supporting habitats (for foraging and other maintenance behaviours) for those seabirds that breed at colonies on the north-west Irish Sea's islands and coastal headlands. These marine areas are also important for seabirds outside the breeding period.

This SPA extends offshore along the coasts of counties Louth, Meath and Dublin, and is approximately 2,333km2 in area. This SPA is ecologically connected to several existing SPAs in this area.

Site Specific Conservation Objectives

Site Specific Conservation Objectives for this site have recently been prepared. In general, for all Annex I bird species within an SPA, the main attributes for consideration are population trends and distribution. These SSCOs are summarised below in Table 5.

Qualifying Interest	SSCO	Attributes
Red-throated Diver *Gavia stellata* [A001]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Great Northern Diver *Gavia immer* [A003]	*To maintain the favourable conservation*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing

	condition of this species in the North-west Irish Sea SPA	and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Fulmar *Fulmarus glacialis* [A009]	*To restore the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Population size – Number – Long term SPA population trend is stable or increasing • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Manx Shearwater *Puffinus puffinus* [A013]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Cormorant *Phalacrocorax carbo* [A017]	*To restore the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – Long term SPA population trend is stable or increasing • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the

		achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Shag *Phalacrocorax aristotelis* [A018]	*To restore the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – Long term SPA population trend is stable or increasing • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Common Scoter *Melanitta nigra* [A065]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Black-headed Gull *Chroicocephalus ridibundu* [A179]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Common Gull *Larus canus* [A182]	*To maintain the favourable conservation condition of this*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing

	species in the North-west Irish Sea SPA	and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Lesser Black-backed Gull *Larus fuscus* [A183]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Herring Gull *Larus argentatus* [A184]	*To restore the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Population size – Number – Long term SPA population trend is stable or increasing • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Great Black-backed Gull *Larus marinus* [A187]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the

		achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Kittiwake *Rissa tridactyla* [A188]	*To restore the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Population size – Number – Long term SPA population trend is stable or increasing • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Roseate Tern *Sterna dougallii* [A192]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Common Tern *Sterna hirundo* [A193]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
A194 Arctic Tern *Sterna paradisaea* [A194]	*To maintain the favourable conservation condition of this*	• Breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing

	species in the North-west Irish Sea SPA	and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Little Tern *Sterna albifrons* [A195]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Guillemot *Uria aalge* [A199]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Razorbill *Alca torda* [A200]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution

		• Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Puffin *Fratercula arctica* A[204]	*To restore the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Breeding population size – Number – Long term SPA population trend is stable or increasing • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent, abundance and availability – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
Little Gull *Hydrocoloeus minutus* [A862]	*To maintain the favourable conservation condition of this species in the North-west Irish Sea SPA*	• Non-breeding population size – Number – No significant decline • Spatial distribution – Ha, timing and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population • Forage spatial distribution, extent and abundance – Location and hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target • Disturbance across the site – Intensity, frequency, timing and duration - The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution • Barriers to connectivity and site use – Number; location; shape; area (ha) - The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA

Table 5 – Conservation Objectives of the North-West Irish Sea SPA

POTENTIAL EFFECTS UPON THE QIS OF THE SOUTH DUBLIN BAY / RIVER TOLKA ESTUARY SPA, THE NORTH BULL ISLAND SPA AND THE NORTH-WEST IRISH SEA SPA

The application site at Ballycullen is at a minimum distance of 16km upstream of the areas designated for these bird species. Given this hydrological distance and the estuarine/coastal mixing processes and dilution that would occur between the stream at the application site, the River Dodder and these designated areas, it is unlikely that the proposed development would lead to any significant decrease in water quality in Dublin Bay which would affect these SPAs or their qualifying interests.

The proposed development will not occur in an area used by the bird species listed above. The habitats within the application site are not suitable for these wading bird species. The

proposed development will not lead to decreases in the population trend of any bird species. The proposed development will not lead to any decrease in the range, timing or intensity of use of any areas within any SPA by these QI bird species. The proposed development will not lead to the loss of any wetland habitat area within either SPA.

Nonetheless, whilst significant effects upon these SPAs are unlikely, they cannot be fully ruled out. In the absence of mitigation, any pollution event of significant magnitude, either alone or in combination with other plans or projects, could potentially affect water quality in the River Dodder, which is upstream of these SPAs. Therefore, it is recommended that mitigation measures are included as part of this NIS to ensure the protection of water quality in the watercourses in the site and that pollution from silt, aggregate or hydrocarbons does not occur.

SOUTH DUBLIN BAY SAC 000201

Site 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.

The 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. It has the largest stand of *Zostera* on the east coast. Supports part of the important wintering waterfowl populations of Dublin Bay. It regularly has an internationally population of *Branta bernicila horta*, plus nationally important numbers of at least a further 6 species, including *Limosa lapponica*.

The full NPWS site synopsis for this site is available online at npws.ie.

In the Natura 2000 data form for this site, the negative threats and pressures on this site are listed as follows:

- D01.01 – Paths, tracks, cycling tract (medium rank)
- D01.02 - Roads, motorways (low rank)

- E01 – Urbanised areas, human habitation (High rank)
- E02 - Industrial and commercial areas (high rank)
- E03 – Discharges (medium rank)
- F02.03.01 - Bait digging, collection (medium rank)
- G01.01 - Nautical sports (medium rank)
- G01.01.02 – Non-motorized nautical sports (medium rank)
- G01.02 - Walking, horse-riding and non-motorised vehicles (high rank)
- H03 – Marine water pollution (medium rank)
- J02.01.02 – Reclamation of land from sea, estuary or marsh (high rank)
- K02.02 – Accumulation of organic material (high rank)

NORTH DUBLIN BAY SAC 000206

Site 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 landuse within the site.

The site possesses an excellent diversity of coastal habitats. The North Bull 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 *Limos alapponica*, 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.

The full NPWS site synopsis for this site is available online at npws.ie.

In the Natura 2000 data form for this site, the negative threats and pressures on this site are listed as follows:

- A04 – Grazing (medium rank)
- E01 – Urbanised areas, human habitation (High rank)
- E02 - Industrial and commercial areas (high rank)
- E03 – Discharges (high rank)
- F02.03 – Leisure fishing (low rank)
- F02.03.01 - Bait digging, collection (medium rank)
- G01.01 - Nautical sports (medium rank)
- G01.02 – Walking, horse-riding and non-motorised vehicles (high rank)
- G02.01 – Golf course (medium rank)
- G05.05 – Intensive maintenance of public parcs / cleaning of beaches (low rank)
- H01.03 – Other point source pollution to surface water (medium rank)
- H01.09 – Diffuse pollution to surface waters due to sources not listed (medium rank)
- I01 – Invasive non-native species (medium rank)
- J01.01 – Burning down (medium rank)
- K03.06 – Antagonism with domestic animals (high rank)

<u>Site Specific Conservation Objectives</u>

Due to the overlap of QIs between the South Dublin Bay SAC and the North Dublin Bay SAC, the SSCOs for both sites are considered together below. SSCOS for both these SACs were produced by the NPWS in 2013.

Mudflats and sandflats not covered by seawater at low tide (Both Sites)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community Extent	Hectares	Maintain the extent of the *Zostera*-dominated community and the *Mytilus edulis*-dominated community complex, subject to natural processes.
Community Structure: *Zostera* Density	Shoots / m^2	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes
Community Structure: *Mytilus edulis* density	Individuals / m^2	Conserve the high quality of the *Mytilus edulis* dominated community, subject to natural processes
Community Distribution	Hectares	Conserve the following community types in a natural condition: Fine sands with *Angulus tenuis* community complex.

Table 6 – SSCOs for Mudflats and Sandflats

Annual Vegetation of Drift Lines (Both Sites)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the natural circulation of sediments and organic matter, without any physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover	Maintain the presence of species-poor communities with typical species: sea rockey; sea sandwort; prickly saltwort and oraches
Vegetation Composition; Negative Indicator Species	Hectares	Negative indicator species (including non-natives) to represent less than 5% cover.

Table 7 – SSCOs for Annual Vegetation of Drift Lines

Salicornia and other annuals colonising mud and sand (Both Sites)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Malahide Estuary- 1.93ha
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
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
Physical Structure: Creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical Structure: Flooding Regime	Hectares Flooded: Frequency	Maintain natural tidal regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward
Vegetation Structure: Vegetation Cover	% Cover at a Representative Sample of Monitoring Stops	Maintain more than 90% of area outside creeks vegetated
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover	Maintain the presence of species-poor communities listed in SMP
Vegetation Structure: Negative Indicator Species – *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*). No new sites for this species and an annual spread of less than 1% where it is already known to occur

Table 8 – SSCOs for Salicornia and Other Annuals

Embryonic Shifting Dunes (Both Sites)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession

Vegetation Composition: Plant health of dune grasses	% Cover	95% of marram grass *Ammophilia arenaria* and or lyme'grass *Leymus arenarius* should be healthy (i.e., green plant parts above ground and flowering heads present)
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain the presence of species-poor communities with typical species: sand couch and/or lyme grass.
Vegetation Composition: Negative Indicator Species – *Spartina anglica*	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover

Table 9 – SSCOs for Embryonic Shifting Dunes

Atlantic Salt Meadows (North Dublin Bay SAC only)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Sediment Supply	Presence / Absence of Physical Barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical Structure: Creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical Structure: Flooding Regime	Hectares Flooded: Frequency	Maintain natural tidal regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward
Vegetation Structure: Vegetation Cover	% Cover at a Representative Sample of Monitoring Stops	Maintain more than 90% of area outside creeks vegetated
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain range of subcommunities with typical species listed in SMP
Vegetation Structure: Negative Indicator Species – *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1% where it is known to occur.

Table 10 – Atlantic Salt Meadows

Mediterranean Salt Meadows (North Dublin Bay SAC only)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Malahide Estuary- 0.64 ha
Habitat Distribution	Occurrence	No decline, subject to natural processes.
Physical Structure: Sediment Supply	Presence / Absence of Physical Barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions
Physical Structure: Creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical Structure: Flooding Regime	Hectares Flooded: Frequency	Maintain natural tidal regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of saltmarsh habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward
Vegetation Structure: Vegetation Cover	% Cover at a Representative Sample of Monitoring Stops	Maintain more than 90% of area outside creeks vegetated
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain range of subcommunities with typical species listed in SMP
Vegetation Structure: Negative Indicator Species – *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1% where it is known to occur.

Table 11 – SSCOs for Mediterranean Salt Meadows

Shifting Dunes along the Shoreline with Ammophila arenaria (white dunes) (North Dublin Bay SAC only)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. Total area mapped - 1.8 ha
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Composition: Plant	% Cover	95% of marram grass *Ammophilia arenaria* and or lyme'grass *Leymus arenarius* should be healthy (i.e., green plant parts above ground and flowering heads present)

health of dune grasses		
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain the presence of species-poor communities dominated by marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*)
Vegetation Composition: Negative Indicator Species – *Spartina anglica*	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover

Table 12 – SSCOs for Shifting Dunes

Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes) (North Dublin Bay Only)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Bare Ground	Percentage cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes
Vegetation Structure: Sward Height	Centimetres	Maintain structural variation within sward
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain range of subcommunities with typical species listed in Ryle et al. (2009)
Vegetation Composition: Negative Indicator Species-including *Hippophae rhamnoides*	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation Composition: Scrub and trees	Percentage Cover	No more than 5% cover or under control

Table 13 – SSCOs for Fixed Coastal Dunes

Humid Dune Slacks (North Dublin Bay only)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Physical structure: hydrological and flooding regeime	Water table levels' ground water fluctuations	Maintain natural hydrological regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
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.
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain range of subcommunities with typical species listed in Delaney et al. (2013)
Vegetaion composition: Cover of *Salix repens*	Percentage cover; centimetres	Maintain less than 40% cover of creeping willow (Salix repens)
Vegetation Composition: Negative Indicator Species	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation Composition: Scrub and trees	Percentage Cover	No more than 5% cover or under control

Table 14 – SSCOs for Humid Dune Slacks

Petalwort (North Dublin Bay SAC only)

The SSCO for this species is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution of Populations	No and geographical spread of populations	No decline
Population size	Number of individuals	No decline
Area of suitable habitat	Ha	No decline
Hydrological conditions: soil moisture	Occurrence	
Vegetation Structure: Height and cover	Centimetres and Percentage	Maintain open, low vegetation with a high percentage of bryophytes and bare ground/

Table 15 – SSCOs for Petalwort

POTENTIAL IMPACTS UPON THE QIS OF THE SOUTH DUBLIN BAY SAC 000201 / NORTH DUBLIN BAY SAC 000206

The application site at Ballycullen is at a minimum distance of 16km upstream of the SACs of Inner Dublin Bay. Potential impacts upon all the QIs of these SACs arising from the proposed application have been considered. Given the hydrological distance involved and the estuarine/coastal mixing processes and dilution that would occur between the application site and these designated areas, it is unlikely that the proposed development will lead to any significant negative effect in water quality in Dublin Bay which would affect these SACs, their qualifying interests or the attributes or targets which have been set in order to maintain or restore the favourable conservation condition of these habitats or species.

In addition, water quality is not a target for the maintenance of any of the QIs within either SAC of Dublin Bay. The targets relate to habitat distribution and area, as well as vegetation structure and control of negative indicator species and scrub. The proposed development will not lead to any impacts upon these QIs, by virtue of changes to the physical structure of the habitats or to the vegetation structure which defines their favourable conservation status.

Nonetheless, whilst significant effects upon these SACs are unlikely, they cannot be fully ruled out. In the absence of mitigation, any pollution event of significant magnitude, either alone or in combination with other plans or projects, could potentially affect water quality in the River Dodder, which is upstream of these SACs. Therefore, it is recommended that mitigation measures are included as part of this NIS to ensure the protection of water quality in the

watercourses in the site and that pollution from silt, aggregate or hydrocarbons does not occur.

4.3 POTENTIAL IN-COMBINATION EFFECTS

This section of the NIS examines whether any other plans or projects have the potential to act cumulatively or in-combination with the proposed development to adversely affect the integrity of the Natura 2000 sites listed for Inner Dublin Bay, i.e., South Dublin Bay / River Tolka Estuary SPA, the South Dublin Bay SAC, North Bull Island SPA and North Dublin Bay SAC.

The proposed development site is situated within the Liffey catchment. Therefore, any national, regional or local land use plans, along with any existing or proposed projects, further upstream in the catchment, or in the same groundwater body, have the potential to affect water quality in the Liffey catchment and therefore also have the potential to act in-combination with the proposed development to affect the above European sites.

Any plan or existing/proposed project that could potentially affect the Natura 2000 sites above in-combination with the proposed development must adhere to the overarching ecological and environmental protective policies and objectives of the relevant land use plan. These policies and objectives will ensure the protection of Natura 2000 sites and will include the requirement for any future project to undergo Screening for Appropriate Assessment and/or Appropriate Assessment.

South Dublin County Development Plan 2022-2028

Planning policy at the local level is provided by the South Dublin County Development Plan 2022-2028. This plan contains a number of objectives and policies relevant to ecology, biodiversity and nature conservation. Some of these relevant measures are outlined in Table 16.

Reference	Objective / Policy
NCBH2 - Policy	Protect, conserve, and enhance the County's biodiversity and ecological connectivity having regard to national and EU legislation and Strategies.
NCBH2 Objective 1:	To support the implementation of the National Biodiversity Action Plan (2017- 2021) and the All-Ireland Pollinator Plan (2021-2025) and to support the adoption and implementation of the South Dublin County Biodiversity Action Plan (2020-2026) and Pollinator Action Plan (2021-2025) and any superseding plans.
NCBH2 Objective 2	To ensure the protection of designated sites in compliance with relevant EU Directives and applicable national legislation.

NCBH2 Objective 3	To protect and conserve the natural heritage of the County, and to conserve and manage EU and nationally designated sites and non-designated locally important areas which act as 'stepping stones' for the purposes of green infrastructure and Article 10 of the Habitats Directive
NCBH2 Objective 4:	To protect our rivers and in particular to avoid overdevelopment which could have an adverse effect on the biodiversity and ecosystems of the river.
Policy NCBH3	Conserve and protect Natura 2000 sites and achieve and maintain favourable conservation status for habitats and species that are considered to be at risk through the protection of the Natura 2000 network from any plans or projects that are likely to have a significant effect on their coherence or integrity.
Policy NCBH4	Protect the ecological, visual, recreational, environmental and amenity value of the County's proposed Natural Heritage Areas and associated habitats and species.
Policy NCBH5	Protect and promote the conservation of biodiversity outside of designated areas and ensure that species and habitats that are protected under the Wildlife Acts 1976 to 2018, the Birds Directive 1979 and the Habitats Directive 1992, the Flora (Protection) Order 2015, and wildlife corridors are adequately protected.
Policy GI1	Protect, enhance and further develop a multifunctional GI network, using an ecosystem services approach, protecting, enhancing and further developing the identified interconnected network of parks, open spaces, natural features, protected areas, and rivers and streams that provide a shared space for amenity and recreation, biodiversity protection, water quality, flood management and adaptation to climate change.
Policy GI2	Strengthen the existing Green Infrastructure (GI) network and ensure all new developments contribute towards GI, in order to protect and enhance biodiversity across the County as part of South Dublin County Council's commitment to the National Biodiversity Action Plan 2021-2025 and the South Dublin County Council Biodiversity Action Plan, 2020-2026, the National Planning Framework (NPF) and the Eastern and Midlands Region Spatial and Economic Strategy (RSES).
Policy GI3	Protect and enhance the natural, historical, amenity and biodiversity value of the County's watercourses. Require the long-term management and protection of these watercourses as significant elements of the County's and Region's Green Infrastructure Network and liaise with relevant Prescribed Bodies where appropriate. Accommodate flood waters as far as possible during extreme flooding events and enhance biodiversity and amenity through the designation of riparian corridors and the application of appropriate restrictions to development within these corridors.
Policy GI4	Require the provision of Sustainable Drainage Systems (SuDS) in the County and maximise the amenity and biodiversity value of these systems.
Policy GI7	Protect, conserve and enhance landscape, natural, cultural and built heritage features, and support the objectives and actions of the County Heritage Plan.

Table 16 – Local Policies Relevant to Ecology and Nature Conservation

Future Plans / Other Projects

The South Dublin County Council planning map tool was used to identify any current or future or projects which may potentially impact on Natura 2000 sites when considered in combination with the proposed development.

In the preceding three years, a large number of planning applications have been granted planning permission. Where necessary, these developments were screened for AA or AA was carried out and an NIS submitted. The proposed development will not lead to cumulative impacts upon any designated site when considered in combination with other developments that have been properly screened for AA, or where an NIS was submitted.

Any future application in the area that has the potential to impact upon these Natura 2000 sites will be subjected to Appropriate Assessment as required under Articles 6(3) of the Habitats Directive. Following mitigation, this current development will have no cumulative impacts upon the SACs / SPAs identified when considered in combination with any other development that has been screened for no impacts themselves (Stage 1) or where potential impacts have been mitigated against (Stage 2 AA / NIS).

5 MITIGATION MEASURES

In order to avoid any reductions in water quality in the area surrounding the proposed development and in order to protect certain designated sites and species as well as the biodiversity within the actual site, a number of mitigation measures must be implemented and followed. These measures are also included in the biodiversity chapter of the EIA.

CONSTRUCTION PHASE

Protection of Habitats

- Site preparation and construction must be confined to the development site only and it must adhere to all the mitigation measures contained in this chapter. Work areas should be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works. On foot of this ecological study and the iterative process involved in the preparation of this report, the applicant is aware of the ecological sensitivity of the location. Upon appointment of the construction contractor, this team will also be made aware of the valued ecological receptors within the site. All measures will be undertaken from initial site works until the completion of all construction works on site.
- It is recommended that the measures outlined in this NIA and in the Biodiversity Chapter of the EIAR, along with any other reports containing environmental mitigation measures, are incorporated into a Construction and Environmental Management Plan.
- In accordance with the policies and objectives of the South County Dublin Development Plan, the existing green infrastructure of the site, i.e., the woodlands and hedgerows, should be incorporated into the development in so far as possible. The proposed development has been designed to retain the central portion of woodland in the site, with the exception of the removal of a portion of this habitat to facilitate the road and a pathway (10 trees will be removed). The woodland to the east of the site will also be retained. A detailed landscape plan has been prepared for the proposed development site. The successful implementation of this landscape plan will mitigate somewhat against the loss of any other woodland habitats in the site.
- In order to prevent damage to treelines / woodlands in the site that are to be retained, then protective barrier fencing should be erected prior to the commencement of site clearance works. This fencing should be erected 10m out from the feature that needs protecting and this most include the Root Protection Zone. Any natural verges or hedgerows within the site that are to be retained should also be fenced off prior to the commencement of works. There must be no dumping or storage of construction waste or machinery in these areas

during construction. The understorey and ground flora of the woodland should also be protected during all stages of site works.

- Tree removal should only be done outside of the bird nesting season. It is recommended that prior to the felling of any tree, that it is examined by a bat ecologist in the 48 hours prior to felling to make sure no bat roosts are present. Soft felling of the trees is recommended.
- Any additional measures contained in the arborists report for the protection of trees must also be followed.
- Any natural verges along woodland features or hedgerows should be retained and managed appropriately or enhanced with additional suitable planting for the benefit of wildlife. They should not be sprayed with herbicide and a low intensity mowing or strimming regime should be incorporated. This will benefit local pollinators.
- Any drainage system under the road shall provide a diameter of 30 cm to allow badgers to pass under the road to avoid traffic

Mitigation for Bats

- The bat survey prepared for this proposed development contains a number of recommendations to minimise potential construction impacts upon the bat species recorded from the site. These mitigation measures include:
    - All trees within the site should be examined for the presence of bats prior to felling by a bat specialist.
    - Should bats be noted in any tree that is earmarked for removal, a derogation license from NPWS must be sought. This can be done with the assistance of a bat ecologist.

Protection of Water Quality

- Efficient construction practices and sequences should be employed on site, and this will minimise soil erosion and potential pollution of local watercourses with soil and sediment. Unnecessary clearance of vegetation should be avoided and only areas necessary for building works should be cleared. Existing grassed verges and vegetated areas around the perimeters of the site and along the watercourses should be retained where possible. Supplemental planting and careful management of these areas will increase the biodiversity value of the site in the future. The retention of these areas will also help retain storm water run-off from the site during construction and operation. Works within the site should be avoided during periods of heavy rainfall.

- It is vital that there is no deterioration in water quality in the streams that occur within the application site. This will protect both habitats and species that are sensitive to pollution. Therefore, strict controls of erosion, sediment generation and other pollutants associated with the construction process should be implemented, including the provision of attenuation measures, silt traps or geotextile curtains to reduce and intercept sediment release into any local watercourses. Guidelines in the following best practice documents should be adhered to:
    - Construction Industry Research and Information Association (CIRIA) (2005) *Environmental Good Practice on Site (C692)*
    - Construction Industry Research and Information Association (2001) *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532)*
    - Construction Industry Research and Information Association (2000) *Environmental Handbook for Building and Civil Engineering Projects (C512)*
    - Environmental Protection Agency (2015) *List of Waste and Determining if Waste is Hazardous or Non-Hazardous*
    - Environment Agency *et al*. (2015) Guidance on the Classification and Assessment of Waste, Technical Guidance WM3
    - Environmental Protection Agency (2013) *Guidance (and Templates) on the Management of Contaminated Land and Groundwater at EPA Licensed Site*
    - Environment Agency (2004) *Model Procedures for the Management of Land Contamination (CLR11).*

- All relevant guidelines within the document *Inland Fisheries Ireland Requirements for the Protection of Fisheries Habitats during Construction and Development Works and River Sites* (www.fisheriesireland.ie) and the updated guidelines *entitled Guidelines on Protection of Fisheries During Construction Works in And Adjacent to Waters (2016)* should also be adhered to and they include.
- The construction team must implement the following specific mitigation measures and these measures should be incorporated into a Construction and Environment Management Plan. This CEMP must include measures to prevent the release of hydrocarbons, aggregates, polluting chemicals, sediment and silt and contaminated waters into water course on site.
    - Surface waters from the construction site should be managed using a system of temporary on-site attenuation features, and these should be fitted with silt barrier devices such as silt fences or silt busters.

- Silt fences and berms should be installed prior to the commencement of construction on site. These should be set back at a minimum of 10m from the streams on site. As the streams within the application site are associated with existing treelines and woodland habitats, the silt fences could be incorporated into the protective fencing that is required for the woodland habitats. The silt fences should be sturdy and constructed of a suitable geotextile membrane to ensure that water can pass through, but that silt will be retained. An interceptor trench will be required in front of this interceptor fence. The silt fence must be capable of preventing particles of 425µm from passing though.
- The silt fences should be monitored daily to ensure that they remain functional throughout the construction of the proposed development. Maintenance of the fences should be carried out regularly. Fences should be inspected thoroughly after periods of heavy rainfall.
- Discharge water generated during laying of concrete should be removed off site for treatment and disposal.

- The following pollution control measures must also be employed on site:
  - A dedicated re-fuelling location must be established on site, and this must be situated away from any watercourse on site.
  - Spill kits stations must be provided at the fuelling location for the duration of the works.
  - Staff must be provided with training on spill control and the use of spill kits.
  - All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site.
  - All chemicals must be stored as per manufacturer's instructions. A dedicated chemical bund will be provided on site.
  - Storage of fuel, and servicing and refuelling of equipment or machinery must be at least 20m from ground clearance or rock-breaking activities.
  - The dedicated refuelling area must be underlain by concrete hard standing. All fuel and oil tank should be inspected on a regular basis for signs of spillages, leaks and damage during use. A record of these inspections must be kept, and any improvements needed be carried out immediately.
  - The risk of fuel spillages on a construction site is at its greatest when refuelling plant. Therefore, only designated trained and competent operatives should be authorised

to refuel plant on site. Plant and equipment should be brought to a designated refuelling area rather than refuelling at numerous locations about the site.

- Chemicals used on site must be returned to the site compound and secured in a lockable and sealed container overnight in proximity to the fuel storage area.
- Drip trays must be utilised on site for all pumps situated within 20m away from ground clearance areas.
- Procedures and contingency plans must be established on site to address cleaning up small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms must be kept on site, on plant working near the river and at the refuelling area.
- Daily plant inspections must be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the plant must be removed from operations for repairs.
- All personnel should observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use.

- Best practice concrete / aggregate management measures must be employed on site. These will include:
  - A designated concrete wash out area should be set up on site; typically, this will involve washing the chutes, pumps into a designated IBC before removing the waste water off site for disposal. These procedures should be covered during a Site Safety & Environmental Induction session.
  - Best practice in bulk-liquid concrete management should be employed on site addressing pouring and handling, secure shuttering, adequate curing times etc.
  - Stockpile areas for sands and gravel must be kept to a minimum size, well away from the drains and watercourses (minimum 50m).
  - Where concrete shuttering is used, measures must be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.
  - Activities which result in the creation of cement dust must be controlled by dampening down the areas.
  - Raw and uncured waste concrete must be disposed of by removal from the site;
  - Stockpile areas for sands and gravel will be kept to a minimum size, well away from the watercourse on site.

- There should be no disturbances of the habitats along the watercourses within the application site. All vegetation within the 10m buffer zone of the stream must be protected, outside of the point where the box culvert bridge is to be installed. Vegetation within these buffer zone should be retained and enhanced using suitable species and in accordance with any landscaping plan that has been produced for the site.

- A separate surface water pipe will cross the central woodland area. This will be situated in a tunnel that is bored under the stream.

OPERATIONAL PHASE

Mitigation for Bats

- Six 2F or 2FN Schwegler bat boxes have been proposed for the site as well as a Schwegler 1WI into the wall of one of the new buildings. The box will be built into the wall and will be almost invisible from ground level once painted in the same style as the building. This must be unlit and should be at least 2.5 metres above ground height and preferably 3 metres or higher. The remaining bat boxes shall be installed on trees with easy access. An ideal substrate for the attachment of bat boxes has a clear bark, straight bough, and overall ease of access for bats exiting and returning to boxes. Three boxes shall be attached to each of two trees unless there are better opportunities created by modifying this arrangement according to the bat specialist. These bat boxes should be erected under the supervision of a bat ecologist.

- Lighting must be controlled to avoid light pollution of green areas and should be targeted to areas of human activity and for priority security areas. The following measures are proposed to reduce the impacts of lighting:
    - Motion-activated sensor lighting is preferable to reduce light pollution.
    - None of the remaining mature trees or trees proposed for planting shall be illuminated.
    - Dark corridors for movement of bats along the grounds of the site.
    - Lighting should be directed downwards away from the treetops.
    - All luminaires shall lack UV elements when manufactured and shall be LED.
    - A warm white spectrum (ideally <2700 Kelvin) shall be adopted to reduce blue light component.
    - Luminaires shall feature peak wavelengths higher than 550 nm.
    - Tree crowns shall remain unilluminated.
    - Planting shall provide areas of darkness suitable for bats to feed and commute through the

site.

- Lighting shall be kept to a minimum around the trees (see below). No light shall fall directly on the trees from street lighting or private houses.
- Additional Guidelines from Bat Conservation Ireland and Bat Conservation Trust have been provided above for considering how to avoid light pollution of the hedgerow to allow for feeding, commuting, and roosting.

Protection of Water Quality

- The Engineering Report has outlined the full proposals for SUDS on the site. Hydrocarbons from vehicles within the site confines will pass through the SUDS detention basins which will clean water and expose potential hydrocarbons to sunlight, to allow the breakdown of same, within the proposed surface water drainage network. This mitigation measure is considered sufficient to eliminate potential risks to ground/soils and subsoils, and groundwater and surface water quality, and will ensure the protection of surface water quality and flows in all downstream receiving watercourses.

Biodiversity Enhancement

- The landscaping of the site offers the potential for biodiversity enhancements within the site. Future landscaping of the site should adhere to the following recommendations:
  - The proposed green roof system provides an opportunity for the creation of suitable habitats for pollinators. Therefore, the species mix should focus on a nectar rich plants that bloom between spring and late summer.
  - The natural verges along the treelines and hedgerows that are to be retained should be retained and managed appropriately for the benefit of wildlife. They should not be sprayed with herbicide and a low intensity mowing or strimming regime should be incorporated. This will benefit local pollinators.
  - Native trees and shrubs should preferably be used in the landscaping, followed by ornamental species that are of benefit to pollinators.
  - A proportion of the grassland / parkland habitats within the site should be managed through methods that mimic traditional grassland management (low level mowing regimes). This will benefit local pollinators. Locally sourced wildflower seed would also be beneficial;
  - Where possible the importation of topsoil from outside the area should be avoided;
  - Allow some areas to go 'wild' where bramble and scrub, etc. can develop;
  - Garden plants that have the potential to become invasive must be avoided;

- Water features, e.g., attenuation ponds, could be incorporated into the development as additional wildlife features.

6 APPROPRIATE ASSESSMENT CONCLUSION

This current NIS has been undertaken to evaluate the potential impacts of the proposed development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of the South Dublin Bay / River Tolka Estuary SPA, the South Dublin Bay SAC, North Bull Island SPA and North Dublin Bay SAC. It is considered that following mitigation, that the proposed project does not have the potential to significantly affect the conservation objectives of these aforementioned Natura 2000 sites and the integrity of these sites as a whole will not be adversely impacted.

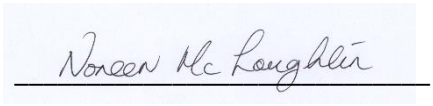
The qualifying interests of the site and their potential to be impacted upon from the potential development were listed in Section 4.2. It is considered that these potential impacts can be successfully mitigated against. With implementation of the mitigation measures there will be no deterioration in water quality or impacts upon any designated habitat or any species dependent on these designated habitats.

In light of the above, it is considered that with the implementation of the mitigation measures, that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of the South Dublin Bay / River Tolka Estuary SPA, the South Dublin Bay SAC, North Bull Island SPA and North Dublin Bay SAC. The integrity of these sites will not be adversely affected. Table 17 follows the integrity of the SAC / SPA checklist, which shows that the integrity of the site would not be affected by the proposed development.

Conservation Objective: Does the project have the potential to:	**Yes / No**
Cause delays in progress towards achieving the conservation objectives of the site?	N
Interrupt progress towards achieving the conservation objectives of the site?	N
Disrupt those factors that help to maintain the favourable conditions of the site?	N
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	N
Other Objectives: does the project have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	N

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 site?	N
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	N
Reduce the area of key habitats?	N
Reduce the population of key species?	N
Change the balance between key species?	N
Reduce diversity of the site?	N
Result in disturbance that could affect population size or density or the balance between key species?	N
Result in fragmentation?	N
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)	N

Table 17 – Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002)



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Ecologist.

(PI Insurance details available on request)

APPENDIX I - REFERENCES AND FURTHER READING

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