ALTEMAR

Marine & Environmental Consultancy

Appropriate Assessment Screening & Natura Impact Statement - Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA for the proposed Strategic Housing Development (SHD) on the lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

16TH March 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Land Development Agency.

Altemar Ltd., 50 Templecarrig Upper, Delgany, Co. Wicklow. 00-353-1-2010713. info@altemar.ie
Directors: Bryan Deegan and Sara Corcoran
Company No.427560 VAT No. 9649832U
www.altemar.ie

Document Control Sheet			
Project	Appropriate Assessment Screening and Natura Impact Statement – Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA for the proposed SHD on the lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.		
Report	Appropriate Assessment Screening & Natura Impact Statement		
Date	16th March 2022		
Version	Author	Reviewed	Date
Draft 01	Bryan Deegan	Jack Doyle	15th March 2022
Planning	Bryan Deegan		16th March 2022

Table of Contents

Introduction

The following Appropriate Assessment Screening and Natura Impact Statement – Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA has been prepared by **Altemar Ltd.** for the proposed SHD on the lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

An Appropriate Assessment is an assessment of the potential effects of a proposed project or plan, on its own, or in combination with other plans or projects, on one or more Natura 2000 sites. Natura 2000 sites are those sites designated as Special Areas of Conservation (SAC) or Special Protection Areas (SPA).

This AA Screening and Natura Impact Statement examines whether the plan or project, either alone, or in combination with other plans and projects, in the view of best scientific knowledge and in view of the sites conservation objectives, will adversely affect the integrity of the European sites.

Altemar Ltd.

Since its inception in 2001, Altemar has been delivering ecological and environmental services to a broad range of clients. Operational areas include residential, infrastructural, renewable, oil & gas, private industry, local authorities, EC projects and State/semi-State Departments. Bryan Deegan is the managing director of Altemar. Bryan is an environmental scientist and marine biologist with 26 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. Bryan Deegan (MCIEEM) holds a MSc in Environmental Science, BSc (Hons.) in Applied Marine Biology, NCEA National Diploma in Applied Aquatic Science and a NCEA National Certificate in Science (Aquaculture). Bryan Deegan carried out all elements of this Appropriate Assessment Screening.

Survey Methodology

A pre-survey data search was carried out. This included examining records and data from the National Parks and Wildlife Service, National Biological Data Centre, the Environmental Protection Agency, in addition to aerial, 6 inch maps and historic satellite imagery. A detailed desktop review and field surveys were carried out, initially in April 2020 and continued through 2021 and into 2022. All terrestrial ecological elements were carried out by Bryan Deegan MCIEEM. The results of these surveys are seen in Appendix I. The Wintering Bird Assessment 2020/2021 was carried out by MKO (Appendix II). This wintering bird assessment report was been prepared by Kathryn Sheridan (M.Sc.), an Ornithologist with MKO, Patrick Manley (B.Sc.), a Project Ornithologist with MKO and Project Director, Dervla O'Dowd (B.Sc. Env.). The field surveys were undertaken in the 2020/2021 winter season by Donnacha Woods and Kathryn Sheridan, both of whom are competent experts in bird surveying. Kathryn Sheridan is an Ornithologist at MKO who took up her position in December 2020. Kathryn holds a M. Sc., Wildlife Conservation and Management and a BA Natural Science: Zoology. She has experience of working on a wide range of bird species, beginning with her M. SC. thesis on breeding hen harrier. From this, Kathryn has gone on to work as Curlew Champion as part of the Curlew Conservation Programme, and Swift fieldworker with BirdWatch Ireland. As a subconsultant, Kathryn has completed wintering wildfowl surveys across Ireland, as well as completing bat and mammal surveys.

Patrick Manley is a Project Ornithologist at MKO. He attended University College Dublin where he completed a BSc (Hons) in Geology. Patrick has over five years' experience working with MKO in designing and executing ornithological surveys, primarily within the renewables sector. Patrick has also worked on ornithological chapters of Environmental Impact Assessment Report (EIAR) to accompany planning applications. Prior to joining the company Patrick worked as part of the conservation team in BirdWatch Ireland, on projects such as the Dublin bay birds project, Kilcoole Little Tern conservation project and the results based agri-environmental scheme for breeding waders. He has extensive experience surveying birds through other projects such as the Irish wetlands bird survey, the Inishmurray all-island breeding birds survey, the national Hen Harrier survey and the countryside bird survey.

Dervla O'Dowd is Project Director with MKO's Ornithology Team with fourteen years of experience in environmental consultancy as a Senior Ecologist and Project Manager. Dervla graduated with a first-class honours B.Sc. in Environmental Science from NUI, Galway in 2005 and joined Keville O'Sullivan Associates in the

same year. Dervla has gained extensive experience in the project management and ecological assessment of the impacts of various infrastructural projects including wind energy projects, water supply schemes, road schemes and housing developments. Dervla holds full membership of the Chartered Institute of Ecology and Environmental Management.

The Wintering Bird Assessment in 2021/2022 was carried out by Flynn Furney (Appendix III). The 2021/2022 survey work was carried out by Eric Dempsey. Eric has around 40 years' experience in ornithology and is a leading authority on Irish birds. He is the author of 8 books on Irish birds including the Complete Field Guide to Irish Birds. He is a listed Heritage Expert with The Heritage Council. The report was written by Billy Flynn. Billy is a Chartered Environmental Scientist and Ecologist with over 20 years' experience. He has worked on a wide range of projects including national infrastructure such as motorway and rail projects. He is Lead Ecologist on a number of ongoing survey projects including greenways, lakes and sites of heritage significance.

It should be noted that the proposed development has been developed across a multidisciplinary team with significant ecological input into the proposed design. The project submission is accompanied by an EIAR, Habitat Management Plan and Construction Environmental Management Plan which were consulted in relation to the preparation of the following report.

Table 1. *Survey Details*

Survey	Surveyor	Date
Habitat	Bryan Deegan (MCIEEM)	13th August 2020, 21st August 2020 & 10th August 2021
Flora	Bryan Deegan (MCIEEM)	13th August 2020, 15th September 2021, 10th August 2021 & 12th October 2021
Bat Surveys (inspections, static detector and emergent)	Bryan Deegan (MCIEEM)	13th August 2020 & 21st August 2020 10th August 2021 & 12th October 2021
Mammal	Bryan Deegan (MCIEEM)	23rd February 2021
Wintering Bird 2020/2021	Kathryn Sheridan and Donnacha Woods	12 surveys from September 2020 to the March 2021.
Wintering Bird 2021/2022	Billy Flynn and Eric Dempsey	7 surveys between 24th November 2021 and 28th February 2022.

Background to the Appropriate Assessment

The Habitats Directive 92/43/EEC (together with the Birds Directive (2009/1477/EC)) forms the cornerstone of Europe's nature conservation policy. The Directive protects over 1000 animals and plant species and over 200 "habitat types" which are of European importance. In the Habitats Directive, Articles 3 to 9 provide the legislative means to protect habitats and species of European Community interest through the establishment and conservation of an EU-wide network of conservation sites (NATURA, 2000). These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive), Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment:

"Any plan or project not directly connected with or necessary to the management of the [NATURA 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the component 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."

As outlined in "Managing European sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" (European Commission, 21 November 2018) *"The purpose of the appropriate assessment is to assess the implications of the plan or project in respect of the site's conservation objectives, either individually or in combination with other plans or projects. The conclusions should enable the competent authorities to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus of the appropriate assessment is therefore specifically on the species and/or the habitats for which the European site is designated."*

As outlined in the EC guidance document on Article 6(4) (January 2007)[1]:

"Appropriate assessments of the implications of the plan or project for the site concerned must precede its approval and take into account the cumulative effects which result from the combination of that plan or project with other plans or projects in view of the site's conservation objectives. This implies that all aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.

Assessment procedures of plans or projects likely to affect European sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity. Regardless of whether the provisions of Article 6(3) are delivered following existing environmental impact assessment procedures or other specific methods, it must be ensured that:

- *Article 6(3) assessment results allow full traceability of the decisions eventually made, including the selection of alternatives and any imperative reasons of overriding public interest.*
- *The assessment should include all elements contributing to the site's integrity and to the overall coherence of the network as defined in the site's conservation objectives and Standard Data Form, and be based on best available scientific knowledge in the field. The information required should be updated and could include the following issues:*
    - *Structure and function, and the respective role of the site's ecological assets;*
    - *Area, representativity and conservation status of the priority and nonpriority habitats in the site;*
    - *Population size, degree of isolation, ecotype, genetic pool, age class structure, and conservation status of species under Annex II of the Habitats Directive or Annex I of the Birds Directive present in the site;*

[1] European Commission. (2007).Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission;

- *Role of the site within the biographical region and in the coherence of the European network; and,*
- *Any other ecological assets and functions identified in the site.*

- *It should include a comprehensive identification of all the potential impacts of the plan or project likely to be significant on the site, taking into account cumulative impacts and other impacts likely to arise as a result of the combined action of the plan or project under assessment and other plans or projects.*
- *The assessment under Article 6(3) applies the best available techniques and methods, to estimate the extent of the effects of the plan or project on the biological integrity of the site(s) likely to be damaged.*
- *The assessment provides for the incorporation of the most effective mitigation measures into the plan or project concerned, in order to avoid, reduce or even cancel the negative impacts on the site.*
- *The characterisation of the biological integrity and the impact assessment should be based on the best possible indicators specific to the European assets which must also be useful to monitor the plan or project implementation."*

Stages of the Appropriate Assessment

This Appropriate Assessment screening and Natura Impact Statement was undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001), Part XAB of the Planning and Development Act 2000, as amended, in addition to the December 2009 publication from the Department of Environment, Heritage and Local Government; 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities' and the European Communities (Birds and Natural Habitats) Regulations 2011. In order to comply with the above Guidelines and legislation, the Appropriate Assessment process must be structured as follows:

1) Screening stage:
   - Description of plan or project, and local site or plan area characteristics;
   - Identification of relevant European sites, and compilation of information on their qualifying interests and conservation objectives
   - Identification and description of individual in combination effects likely to result from the proposed project;
   - Assessment of the likely significance of the effects identified above. Exclusion of sites where it can be objectively concluded that there will be no likely significant effects; and,
     Conclusions
2) Appropriate Assessment (Natura Impact Statement):
   - Description of the European sites that will be considered further;
   - Identification and description of potential adverse impacts on the conservation objectives of these sites likely to occur from the project or plan; and,
   - Mitigation Measures that will be implemented to avoid, reduce or remedy any such potential adverse impacts
   - Assessment as to whether, following the implementation of the proposed mitigation measures, it can be concluded, beyond all reasonable scientific doubt, that there will be no adverse impact on the integrity of the relevant European Site in light of its conservation objectives"
   - Conclusions.

If it can be demonstrated during the AA screening phase (Stage 1), that the proposed project will not have a significant effect, whether alone or in combination with other plans or projects, on the conservation objectives of a Natura 2000 site, then no further AA (Stage 2) will be required. It is important to note that there is a requirement to apply a precautionary approach to AA screening. Therefore, where effects are possible, certain or unknown at the screening stage, AA will be required.

In addition, it should be noted that Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an AA of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

Stage 1 Screening Assessment

Management of the Site

The plan or project is not directly connected with, or necessary to the management of Natura 2000 sites.

Description of the Proposed Project

The Land Development Agency intend to apply to An Bord Pleanála (the Board) for a 10 year permission for a Strategic Housing Development with a total application site area of c.9.6 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

The development will consist of the demolition of existing structures (3,736 sq m), including:

- Single storey Former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Temporary structures including single storey portacabins (677 sq m);
- Removal of security fence at Dundrum Road entrance;
- Demolition of element of Gatelodge (4 sq m).

The development will also consist of alterations and partial demolition of the perimeter wall, including:

- Removal of section of perimeter wall adjacent to Rosemount Green (south);
- Formation of a new opening in perimeter wall at Annaville Grove to provide a pedestrian and cyclist access and associated gate;
- Removal of section of perimeter wall at the existing Dundrum Road access;
- Alterations and removal of sections of wall adjacent to Dundrum Road, including the provision of a new vehicular, cyclist and pedestrian access;
- Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access; and
- Removal of walls adjacent to Main Hospital Building.

The development with a total gross floor area of c. 106,770 sq m (c. 106,692 sq m excluding retained existing buildings), will consist of 977 no. residential units comprising:

- 940 no. apartments (consisting of 53 no. studio units; 423 no. one bedroom units; 37 no. two bedroom (3 person) units; 317 no. two bedroom (4 person) units; and 110 no. 3 bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 6 storeys (excluding plant) in height, together with private (balconies and private terraces) and communal amenity open space provision (including courtyards and roof gardens) and ancillary residential facilities;
- 17 no. duplex apartments (consisting of 3 no. 2 bedroom units and 14 no. 3 bedrooms units located at Block 02, 08 and 09), together with private balconies and terraces.
- 20 no. two and three storey houses (consisting of 7 no. three bedroom units and 13 no. 4 bedrooms units) and private rear gardens located at Block 02, 08 and 09).

The development will also consist of 3,889 sq m of non-residential uses, comprising:

- Change of use and renovation of existing single storey Gate Lodge building to provide a café unit (78 sq m);
- 1 no restaurant unit (307 sq m) located at ground floor level at Block 03;
- 6 no. retail units (1,112 sq m) located at ground floor level at Blocks 03, 06 and 07;
- 1 no. medical unit (245 sq m) located at ground floor level at Block 02;
- A new childcare facility (463 sq m) and associated outdoor play area located at ground floor level at Block 10; and
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,684 sq m) located at ground and first floor level at Block 06.

The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, pathways and boundary treatments, wetland feature, part-basement, car parking (547 no. spaces in total, including car sharing and accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections; plant (including external plant for district heating and pumping station); waste management provision; SuDS measures; sustainability measures (including green roofs and solar panels); signage; public lighting; any making good works to perimeter wall and all site development and excavation works above and below ground.

The proposed site outline, location, and site plan (existing and masterplan) are demonstrated in Figures 1 – 4.

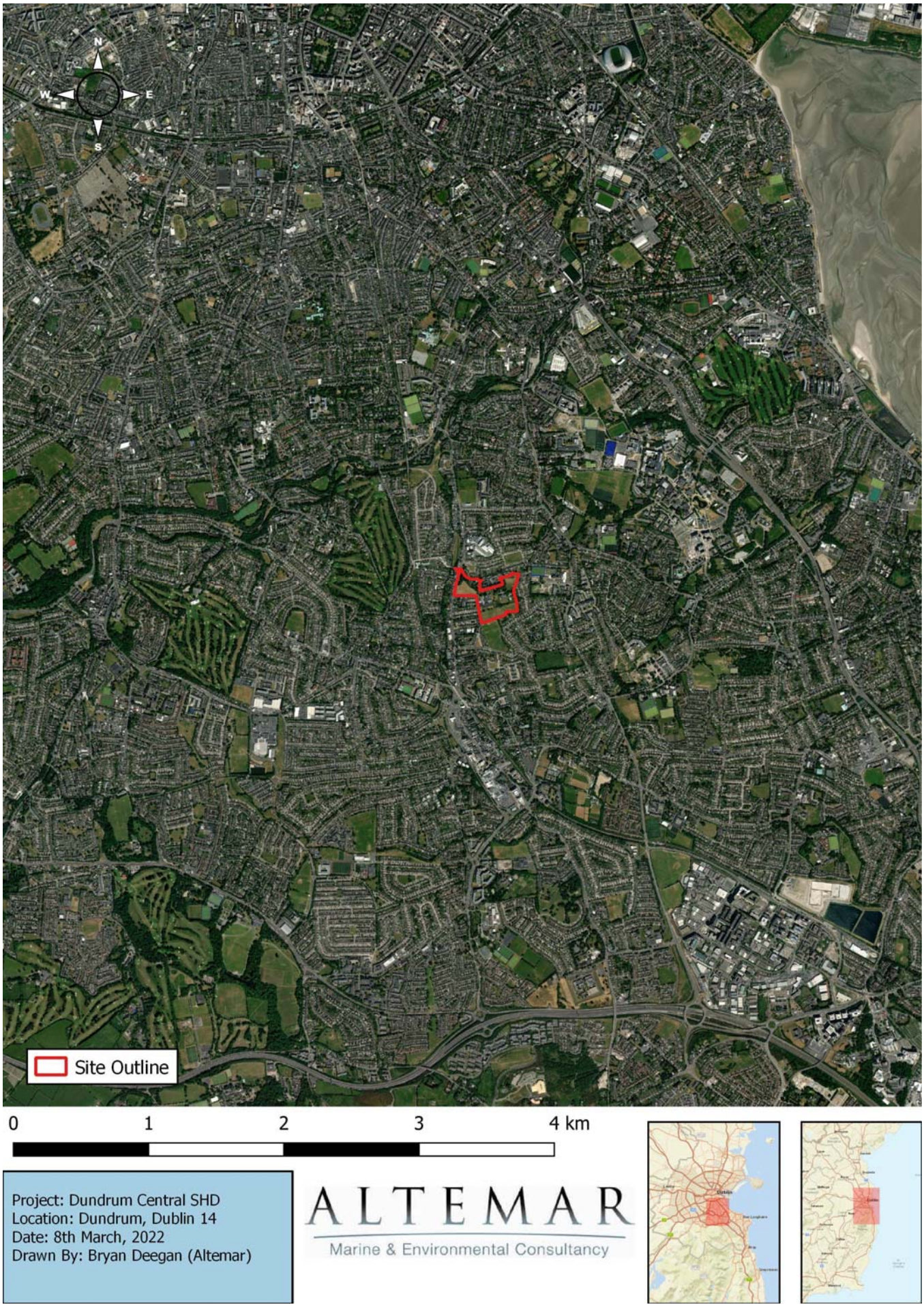


Figure 1. Proposed site outline and location

Figure 2. Proposed site outline

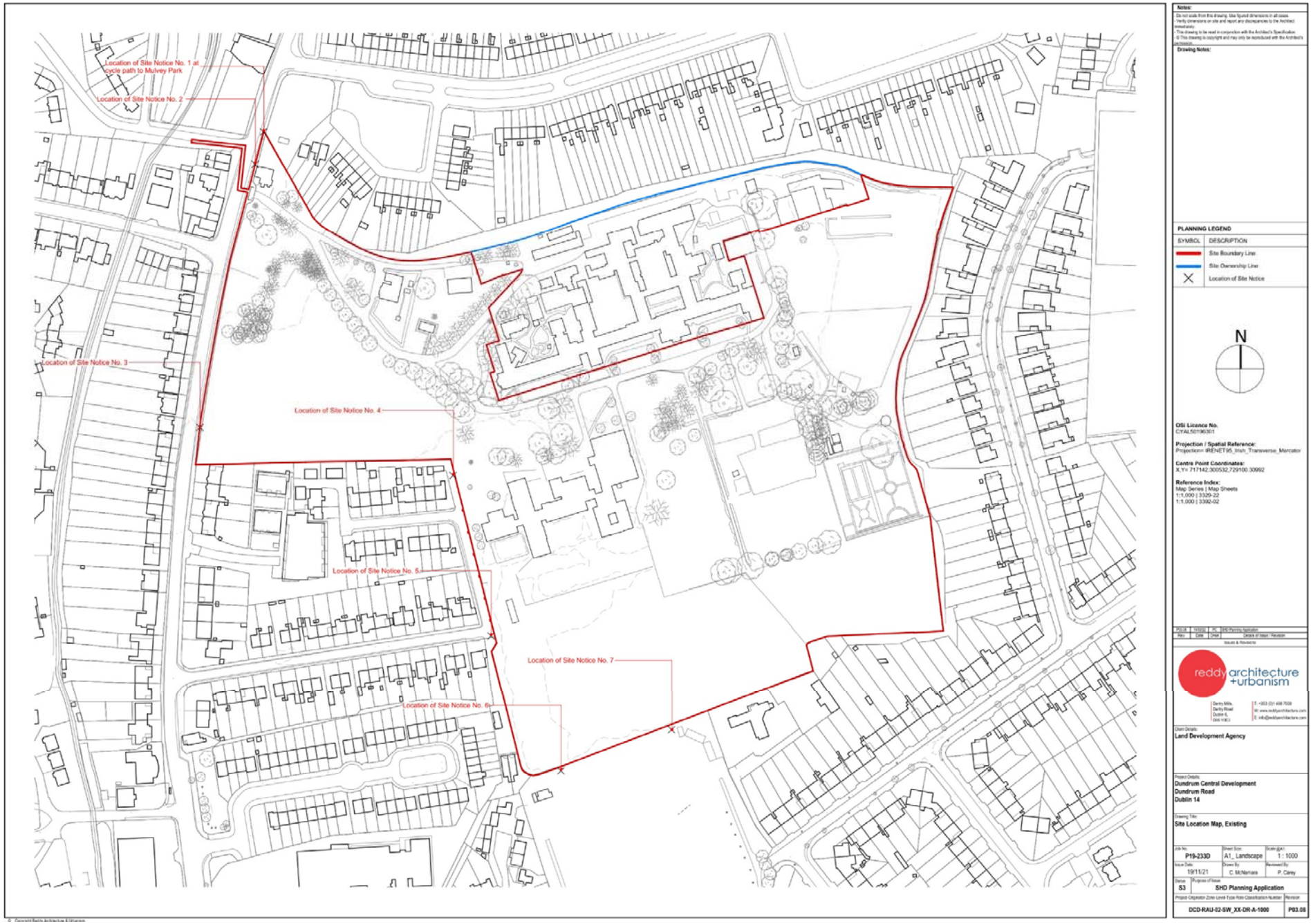


Figure 3. Site plan (Existing)

Figure 4. Proposed site plan - Masterplan

Landscape

The Dundrum Central SHD Landscape Architecture & Public Realm Design Report has been prepared by AECOM to accompany this planning application. This report outlines the following landscape objectives:

'*The overriding design intention is to create an inclusive and coherent new community based on best practice urban planning and landscape design principles, giving residents a sense of place, ownership and identity. The design objectives respond to the site's character:*

- *Retain good quality trees and parkland on site.*
- *Retain and protect historic boundary stone walls and walled garden on site.*
- *Form a green spine through development linking residential and amenity nodes.*
- *Form a hierarchy of quality public open spaces including plazas, parkland, squares, community parks and pocket parks, providing a strong neighborhood identity. Encouraging social interaction, promoting health, well-being and social and civic inclusion.*
- *New housing to overlook open spaces to ensure passive surveillance of amenity areas. Ensuring the open spaces feel safe, secure for all to use*
- *Provide a strong SuDs management train whilst forming habitat creation. The scheme will contain environmental features such as tree planting, raingardens, Green roofs, and wetland.*
- *Form both formal and informal natural play elements throughout the scheme.*'

Further, this report outlines the following Environment Strategy for the proposed landscaping plan:

'*Habitat creation has been a key contribution to the landscape development proposal. The differing SuDs components have helped form a variety of inviting habitats through the development. Waters bodies and ponds are vital habitats for frogs, newts and a variety of insects including dragonflies. The public open spaces through the development have native meadow planting as per the All Ireland National Pollinator Plan. Species rich grasslands provide habitats and food for insects and bees. Other habitats that will be created through the open space will include:*

- *Open bonded brickwork within detailing of infrastructure buildings allowing for bat roosting,*
- *Bird and Mammalian nest boxes throughout the open public space,*
- *Log piles simulate fallen trees, and are valuable habitat for mosses, lichens and fungi, as well as many insects through the wetlands and extensive greenroofs; and*
- *Crushed aggregate pathways along secondary pathways allows water to permeate naturally through the soil, without the need for drainage channels and associated infrastructure.*'

This report also outlines the following in relation to the soft landscaping plan:

'*The overall planting approach is focused on creating a rich and biodiverse planting footprint in the context of a significant re-development of the site. The removal of existing hedgerows and grassland is offset by the addition of pollinator friendly wildflower meadows, tree planting and mixed native woodland along the Eco Corridor and in the community park south of the site. All retained tree and hedgerow protection measures will be in accordance with the mitigation recommendations prescribed in the ecologists and arborist report.*'

In addition: '*All open spaces will be multi-functional, catering for the needs of people, as well as the natural environment, supporting habitat creation, the growing of trees, plants and food. A strong SuDs management Train with collection, conveyance and storing components will not only provide a key blue infrastructure on site but establish new habitats and enhance biodiversity throughout the development. These key components include Green Roofs, Bio retention systems/raingardens, permeable paving, drainage ditches, tree planting and the formation of a integrated constructed wetland in the community park of the development. The integration of these elements in the scheme will not only improve the surface water drainage of the site but improve the surrounding environment and aid climate change mitigation.' 'Dundrum Central SHD contains existing natural assets such as the parkland entrance of mature trees, the walled garden. Other assets and future landscape such as wetland areas can become important educational tools for local children visiting the site, learning about the natural environment, nature and local heritage*.' There are numerous strategies to enhance biodiversity on site including the 'Elm Park Eco-Corridor' which '*will provide an important habitat corridor on site. The area already contains some semi-mature trees which will be retained, a ditch and some wet grassland areas. The area can be significantly improved, and the areas of wetland habitat increased which will benefit a wide variety of plant and animal species including bats. It will also be designed to provide educational tools/information which can be used by local school children as well as adults, to gain greater understanding of the natural world*.'

The proposed landscape layout – overall plan is demonstrated in Figure 5.

Figure 5. Landscape layout – overall plan

Drainage

An Infrastructure Report has been prepared by BMCE, on behalf of LDA, to accompany this application. This Report details the foul and surface water drainage strategies for the proposed development site.

Surface Water Drainage

In terms of existing surface water drainage, the report outlines the following:

'***2.2 EXISTING SURFACE WATER INFRASTRUCTURE***

The lands/roads surrounding the site contain a number of surface water sewers and a combined sewer. The River Slang runs south to north, approximately 70m to the west of the site and a drainage ditch runs through the site and northwards along the eastern boundary as shown in Figure 2.1.

2.2.1 Existing Site Drainage

Existing site drainage confirmed by CCTV and dye testing have shown the existing buildings on site discharging to a combined drainage system on site. This system discharges to the Ø300mm combined sewer in the Dundrum Road, connecting at the current site entrance.

2.2.2 Existing Surface Water Drainage in The Vicinity of The Site:

a) The River Slang: The River Slang runs from south of Dundrum Village northwards down to the River Dodder and passes approximately 70 metres west of the western site boundary on the Dundrum Road. The estimated 100-year storm level in the river is approximately 1.5metres lower than the lowest point of the site, at the existing Dundrum Road entrance. Predicted floods, for storms with 1 in 10, 1 in 100 & 1 in 1000- year return periods are shown on the OPW CFRAMS Flood Maps. This flooding does not encroach on the subject site. Refer to the Site-Specific Flood Risk Assessment for further information.

b) Public Sewer and drainage ditch on the south and east boundary: A 525mm diameter surface water sewer enters the south side of the site from Rosemount Green. Refer to Figure 2.1 below. This connects into an open drainage ditch which runs west to east across the site along the southern edge of the walled garden and discharges through a grated opening in the boundary wall (Location B1 in Figure 2.1 below) where it continues as a drainage ditch running northwards just along and outside of the east boundary wall. Property Registration Authority maps indicate that the drainage ditch is in third party ownership along the outside of the wall. There are no records of flooding in this watercourse. Flow monitoring by LowFlow Ltd was carried out at Location B1, refer to the report attached in Appendix 3. The report indicates that there is a correlation between the flow in the channel and rainfall events.

2.2.3 Drainage Ditch flood level

The Lowflo flow logger results showed that the depth of water in the drainage ditch varied between 25mm and 180mm during the two and a half months of recordings. The drainage ditch is approximately 1m deep. There is insufficient data to calculate a flood level for the 1 in 100 year storm event. In the case that the level in the ditch rises, the head of water in the pipe network discharging to it, will be sufficient to push the water through and out into the ditch.'

Figure 2.1 - Aerial view of the site with two surface water drainage connection locations indicated.

In relation to the proposed surface water drainage strategy, the report outlines the following:

'***2.3 PROPOSED SURFACE WATER DRAINAGE SYSTEM***

The proposed surface water drainage system is designed to comply with the 'Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies Technical Document – Volume 2, New Developments, 2005' and the 'Greater Dublin Regional Code of Practice for Drainage Works, V6.0 2005'. CIRIA Design Manuals C753, C697 and C609 have also been used to design the surface water drainage system within the site.

2.3.1 Catchment strategy

The development will be split into three catchments. The catchments will be attenuated separately by means of blue roofs and attenuation tanks, which follow approximately the existing site topography and natural drainage routes on site. Catchment A drains to the Slang, via an existing surface water sewer. Catchments B drains to the open drainage ditch on site (B1) or just outside the site (B2). Connection points 'A' , 'B1' and 'B2' shown in Figure 2.1 and 2.2.

Figure 2.2 – Catchment Strategy

2.3.1.1 Catchment Area

The total site area is c9.6ha. The positively drained area on site is c6.46ha in size, comprising of Catchment A (1.406ha) , Catchment B1 (4.05ha) and Catchment B2 (1.01ha). The total area will collect all the surface water drainage into an underground pipe network. The drainage system will use different SuDS measures in the treatment train, which will have an influence on the runoff coefficients. The more porous the material, the lower the runoff coefficient. Surface materials will consist of, but not limited to permeable paving, intensive and extensive green/blue roofs and podiums, impermeable roofs, bio-retention areas, filter strips, a detention basin, impermeable hardstanding, tree pits and landscaped areas. Please refer to the BMCE SuDS layout drawing C1030 for the illustration and location of the SuDS measures and attenuation storage areas.'

With regard to the proposed Sustainable Urban Design Systems (SuDS) for the proposed development site, the report outlines that the following SuDS measures will be implemented into the surface water drainage strategy:

- Green Roofs
- Permeable Paving
- Attenuation Devices
- Bio-Retention and Tree Pits
- Detention Basin
- Filter trenches
- SuDS Management Train

Foul Water Drainage

In terms of existing foul drainage systems, the report outlines the following:

'*The foul drainage from the existing buildings on site drains to a combined drainage system on site which discharges to the Ø300mm combined sewer on the Dundrum Road. The combined sewer drains in a northerly direction towards the River Dodder.*'

In relation to the proposed foul drainage system, the report details the following:

'*The proposed foul drainage system will be designed to take discharges from the new residential units. There is a small amount of commercial/retail space on site. Drainage from any kitchen/canteen facilities will discharge through a grease separator designed in accordance with IS EN 1825 Part 1 and Part 2 and to Irish Water requirements. The foul system will connect to the Irish Water network at the existing 300mm combined sewer in the Dundrum Road surface.*

It is calculated that the proposed development will have a total hydraulic loading of 451m3 per day of foul effluent generated during the operational phase of the development. This equates to an average flow of 5.17 litres/second (over a 24-hour period) and a peak flow of 16.06 litres/second. A breakdown of the foul loading calculations is included in Appendix 4.

A Pre-connection Enquiry application was submitted to Irish Water to confirm capacity in the receiving network and a Confirmation of Feasibility letter was obtained on the 23rd of September 2021. The letter included site specific comments. A controlled and limited foul drainage outflow from the site has been requested to limit the impact on the Irish Water receiving system. This has been addressed by the provision of a controlled flow wastewater pumping station on site. Refer to BM drawing nr C1220 and C1221 for details. See Appendix 5 for a copy of the Irish Water Confirmation of Feasibility Letter. An Irish Water Statement of Design Acceptance has been received on the 3rd of March.'

The existing surface water drainage layout, undercroft drainage layout, proposed foul and surface water drainage layout, surface water overland flow routes, and SUDS layouts are demonstrated in Figures 6 – 10.

Flood Risk Assessment

A Site Specific Flood Risk Assessment has been prepared by Barrett Mahony Civil & Structural Consulting Engineers to accompany this planning application. This report concludes with the following:

'*The flood risk assessment has been carried out in accordance with the OPW publication "The Planning System and Flood Risk Assessment Guidelines for Planning Authorities". An assessment has been carried out. The developed site is shown not to be at a significant risk from flooding and to not create a significant risk to adjoining areas or downstream. In summary:*

1. *River Slang: The site lies outside the predicted 1 in 1000 year flood extent of flooding on this river.*
2. *Surface Water Drainage:*
    a. *The system is designed for a 100yr storm + 20% climate change without flooding.*
    b. *The surface water drainage from the site to the surface water sewer network will discharge at rates no greater than the existing greenfield runoff rates thereby not increasing the risk of flooding to adjoining areas or downstream from the site.*
    c. *Overland flow routes in the event of a significant & unlikely blockage of the surface water drainage system have been considered. Overland flows are contained within the site in a controlled manner without risk to the residential buildings on site.*
3. *Standard mitigation measures will apply on site. House and apartment floor levels are set 150mm above the surrounding ground level to minimise flood risk. All basements on site will be waterproofed. The top of basement car park entrance ramps will be set 100mm above the surrounding ground levels to avoid backflow of surface water down the ramps.*

Therefore, the development is deemed acceptable from a flood risk assessment perspective.'

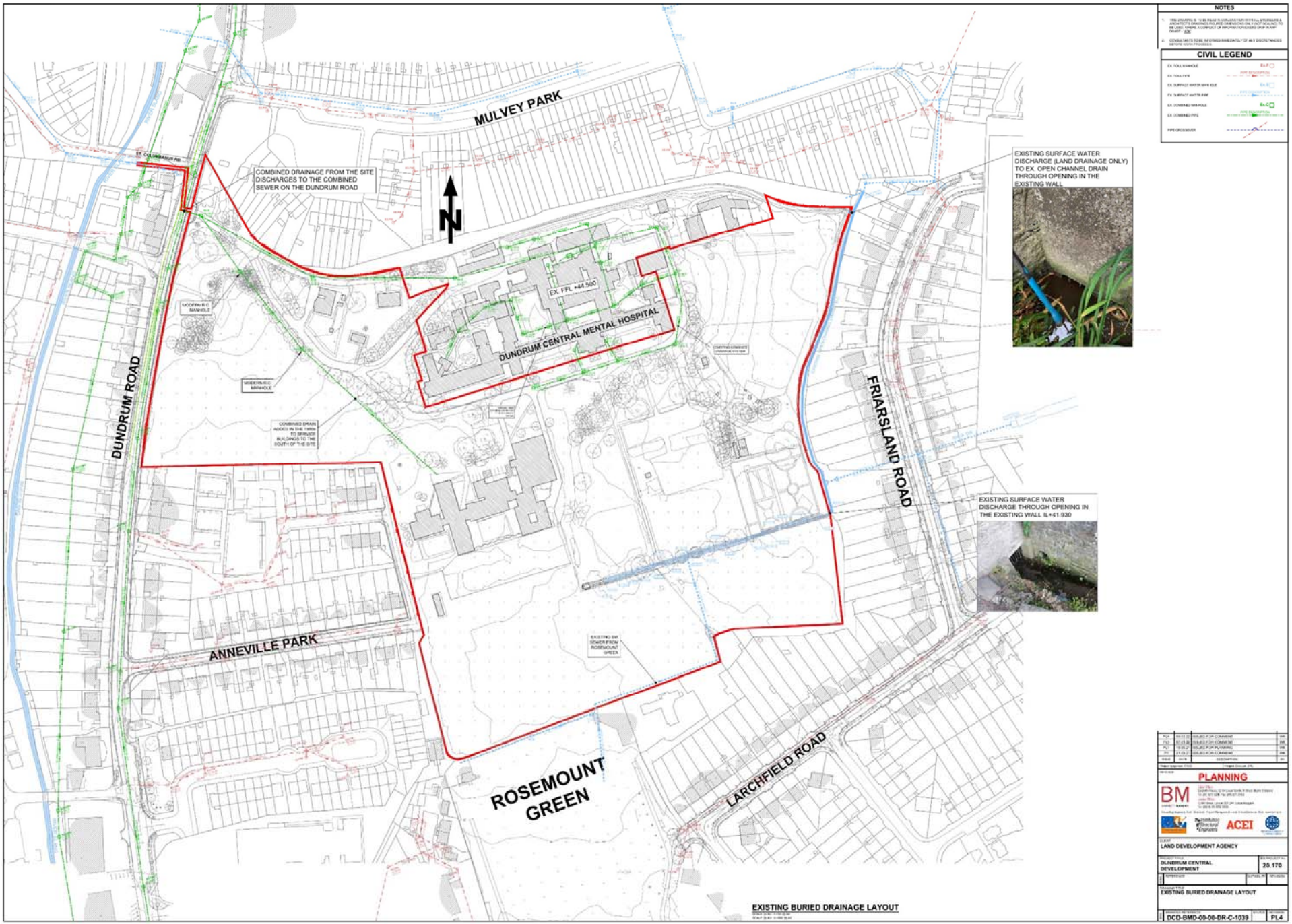


Figure 6. Existing surface water drainage layout

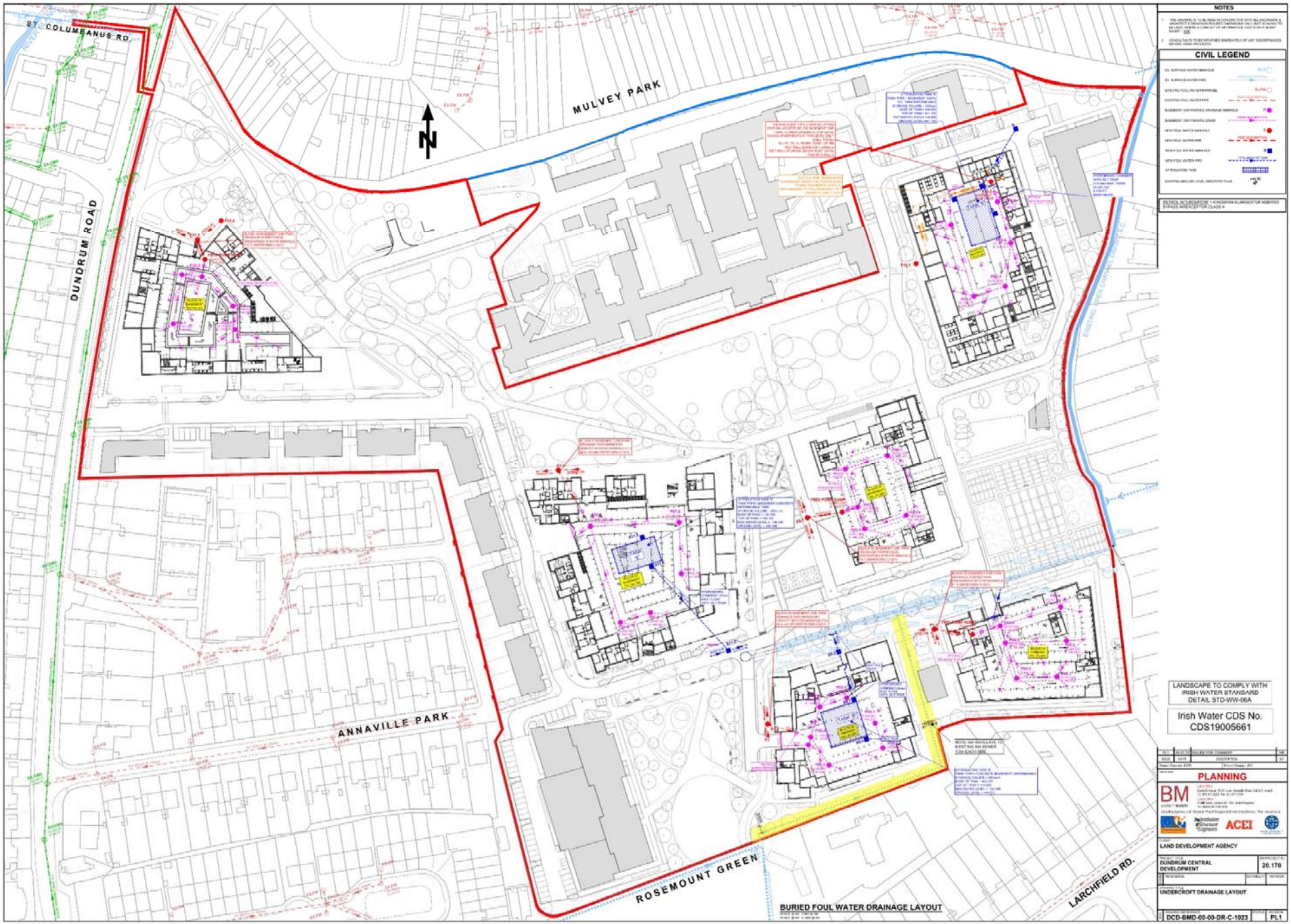


Figure 7. Undercroft drainage layout

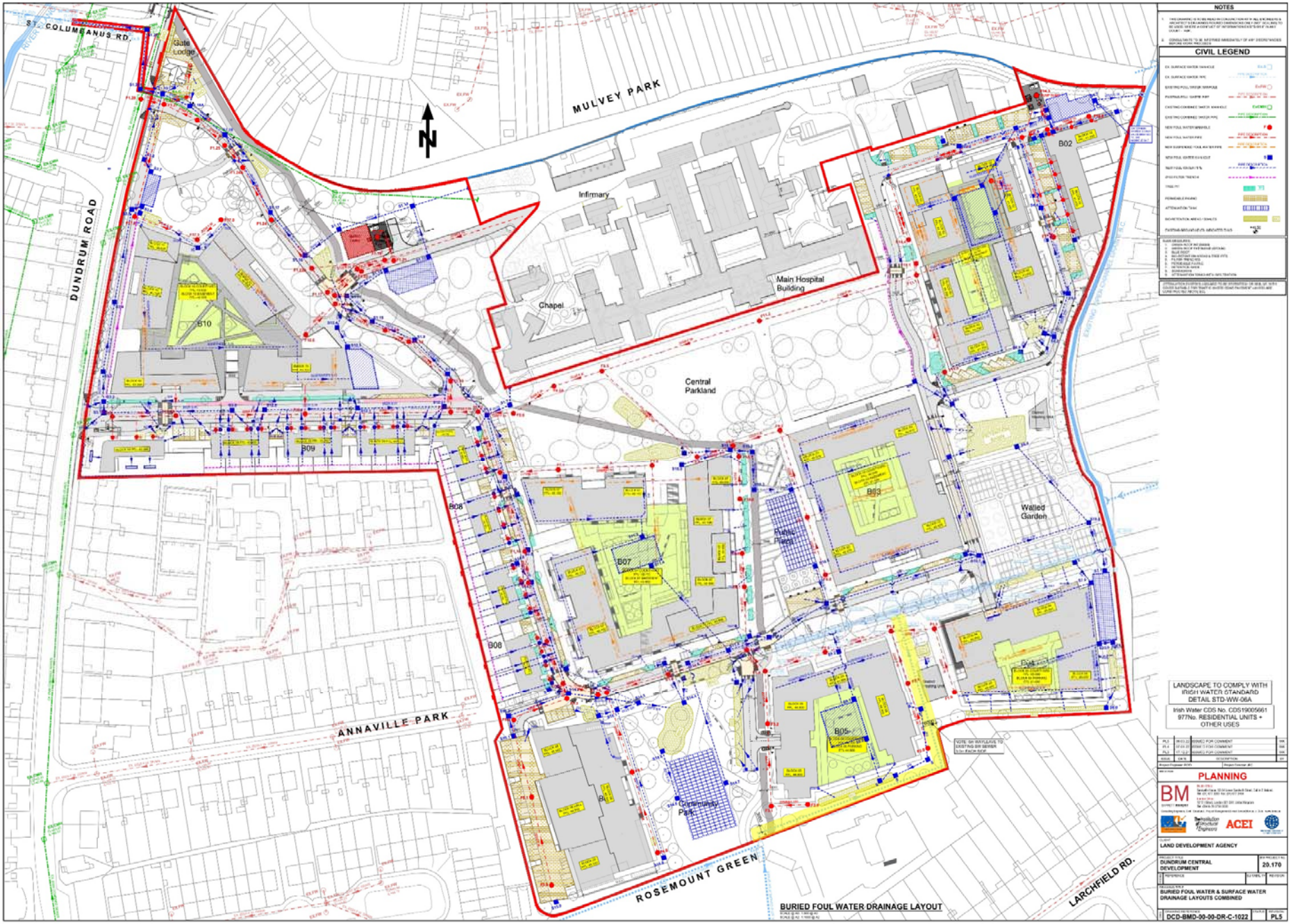


Figure 8. Buried foul and surface water drainage network

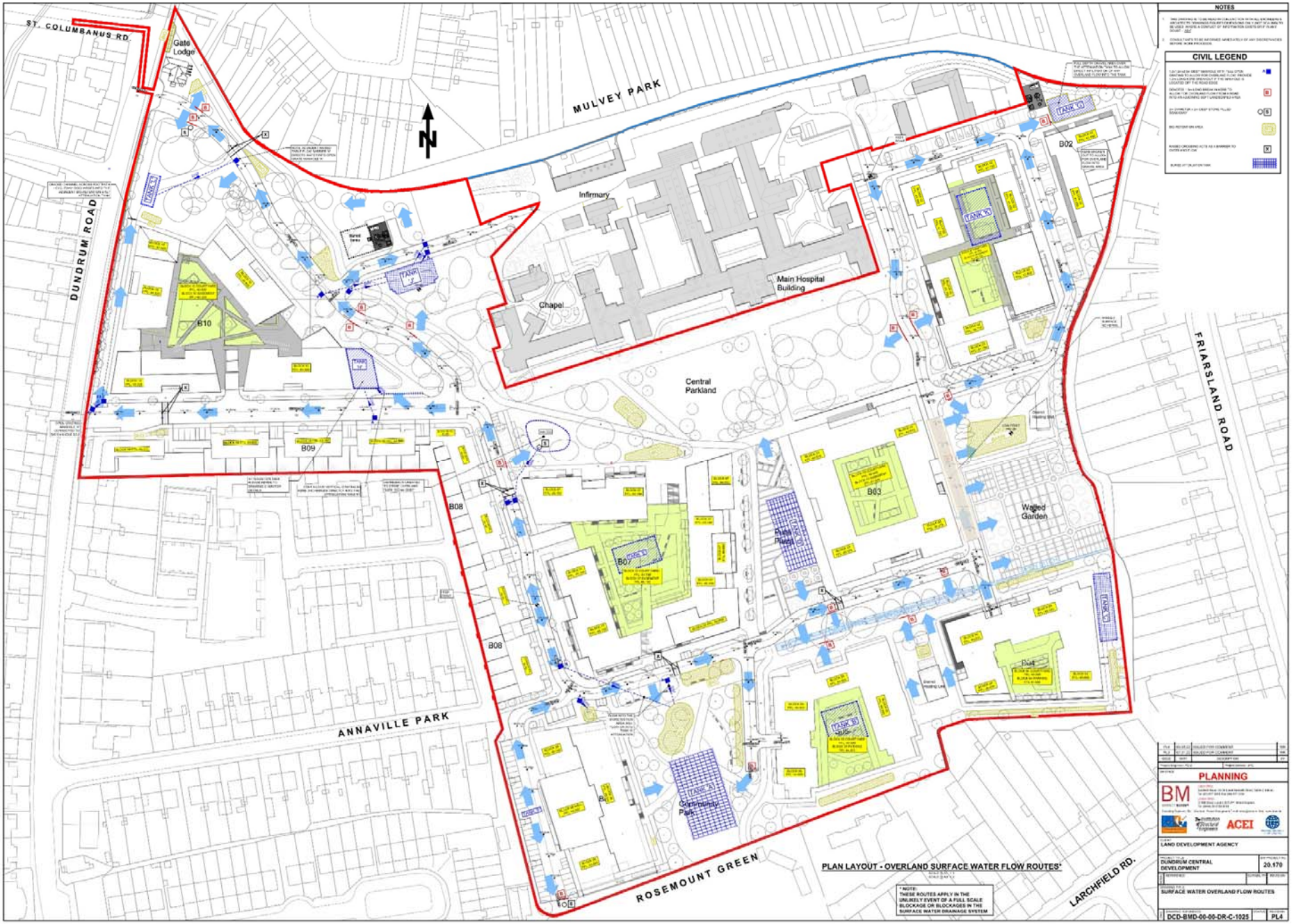


Figure 9. Surface water overland flow routes

Figure 10. SuDS layout

Identification of Relevant Natura 2000 Sites

The proposed works are not located within a Natura 2000 site. The Natura 2000 sites within 15 kilometres of the subject site are detailed in Table 1 and Figures 11 and 12. Their qualifying interests and the potential impact of the works on these qualifying interests are found in Tables 2 and 3.

The subject site is located in close proximate to Dublin Bay, situated 2.8 km from both South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA (Figures 11 & 12). There is a direct hydrological connection (Figures 13 and 14) from the subject site to the aforementioned Natura 2000 sites via the proposed surface water drainage strategy. It is proposed to separate the surface water drainage strategy for the subject site into three catchments: Catchment A, Catchment B1, and Catchment B2. Surface water drainage from Catchment A will join the existing public surface water network via a manhole connection located to the north-west of the site. This network then outfalls to the River Slang. Surface water drainage from Catchment B1 will, after attenuation, outfall to an existing open channel drain that passes through the subject site. Catchment B2 will, after attenuation, outfall to an existing drainage ditch located just outside of the site. As both the River Slang and the aforementioned open channel drain (which leads to the Elm Park stream) flow into Dublin Bay, there is a direct hydrological connection to Natura 2000 sites located along this pathway. Extensive mitigation measures are required to ensure that surface water drainage will not contain silt or pollutants that could significantly impact upon the qualifying interests of these proximate Natura 2000 sites.

Mitigation measures are required to mitigate against the potential impact of contaminated surface water entering Dublin Bay and impacting on the Conservation objectives of Natura 2000 sites.

There is an indirect hydrological pathway to marine-based Natura 2000 sites in Dublin Bay via the proposed foul wastewater drainage network. Foul wastewater from the proposed development will be directed to an existing combined sewerage system located to the northern boundary of the subject site. Foul wastewater will then outfall to Ringsend WwTP for treatment.

No other Natura 2000 sites, beyond those within Dublin Bay are deemed to be in the potential Zone of Influence (ZoI). The ZoI is deemed to be within 2km of the proposed development, with the potential for extending this to beyond 2km via direct pathway e.g. watercourse. However, following the precautionary principle, screening of all Natura 2000 sites within 15km and those with a direct/indirect pathway beyond 15km is carried out. It is found there are no Natura 2000 sites with a direct/indirect pathway beyond 15km of the subject site.

Table 1. Proximity to designated sites of conservation importance

Site Code	NATURA 2000 Site	Distance
Special Areas of Conservation		
IE0000210	South Dublin Bay SAC	2.8 km
IE0002122	Wicklow Mountains SAC	7.1 km
IE0000206	North Dublin Bay SAC	7.5 km
IE0001209	Glenasmole Valley SAC	9.2 km
IE0000725	Knocksink Wood SAC	9.7 km
IE0003000	Rockabill to Dalkey Island SAC	9.9 km
IE0000713	Ballyman Glen SAC	11.1 km
IE0000202	Howth Head SAC	12.1 km
IE0000199	Baldoyle Bay SAC	13 km
Special Protection Areas		
IE0004024	South Dublin Bay and River Tolka Estuary SPA	2.8 km
IE0004040	Wicklow Mountains SPA	7.4 km
IE0004006	North Bull Island SPA	7.5 km
IE0004172	Dalkey Islands SPA	9.8 km
IE0004016	Baldoyle Bay SPA	12.9 km
IE0004113	Howth Head Coast SPA	14.1 km

Tables 2 and 3 provides an overview of the initial screening of Natura 2000 sites within 15km of the subject site. Included within this table are the qualifying interests for each Natura site and the Source/Pathway/Receptor links between the works and the respective Natura 2000 site with the potential to result in adverse effects (without mitigation measures).

A distance of 15km was selected due to the proximity of the proposed project to various waterbodies and/or drainage ditches, which can act as potential pathways. Natura 2000 sites within 15km and watercourses within 1km are shown in Figures 11-16.

There is no direct or indirect hydrological pathway from the proposed development site to the Natura 2000 sites beyond 15km and no impact is foreseen on these sites.

Table 2. Initial screening of NATURA 2000 sites within 15km and NATURA 2000 sites within 15km with potential of hydrological connection to the proposed development – Screened IN (NIS Required)

Natura Code	Name	Screened In/Out	Details/Reason
Special Areas of Conservation			
IE0000210	South Dublin Bay SAC	**IN**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110] **Potential Impact** The development site is located within a suburban area 2.8 km from the South Dublin Bay SAC (Figure 11). There is a direct hydrological pathway from the proposed development site to this SAC via the proposed connection of surface water drainage to the River Slang and an existing open channel drain Elm Park Stream. Both of these waterbodies outfall to Dublin Bay. Mitigation measures are required to ensure that surface water drainage will not contain silt or pollutants that could significantly impact upon the qualifying interests of these proximate Natura 2000 sites. There is an indirect pathway from the site to this SAC via the proposed foul wastewater network. Foul wastewater will be directed to the existing public combined sewage system located to the northern extremity of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on the Natura 2000 site. In a strict application of the precautionary principle, it has been concluded that significant effects on the South Dublin Bay SAC are likely, in the absence of mitigation measures, from the proposed works primarily as a result of the direct

			hydrological connection to the SAC from the proposed project, which involves works proximate to the drainage ditch, in addition to works that would drain the site. Mitigation measures will need to be in place to prevent silt and petrochemicals entering the drainage ditch, which has a direct pathway to this SAC. For these reasons (mitigation measures are required in relation surface water and a direct pathway), it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives. **Significant effects are likely - Natura Impact Statement Required**
IE0000206	North Dublin Bay SAC	**IN**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (*Petalophyllum ralfsii*) [1395] **Potential Impact** The proposed works are located within an urban area 7.5 km from the North Dublin Bay SAC (Figure 11). There is no direct hydrological connection to this SAC as waters would enter the marine environment in Dublin Bay prior to reaching this SAC. There is an indirect pathway from the site to the SAC via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain which flows to the Elm Park stream. Due to the distance (3 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SAC. Foul wastewater will be directed to the existing public combined sewage system located to the northern extremity of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend

			Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SAC. Out of an abundance of caution, the North Dublin Bay SAC has been screened 'IN' as, given the close proximity to the proposed development, the scale of the proposed development, and the hydrological pathway of surface water to Dublin Bay. Mitigation measures may be required to protect the conservation interests of this SAC. **Potential for significant effects on Qualifying Interests - Natura Impact Statement Required**
Special Protection Areas			
IE0004024	South Dublin Bay and River Tolka Estuary SPA	**IN**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999] **Potential Impact** The development site is located within an urban area 2.8 km from the South Dublin Bay and River Tolka Estuary SPA (Figure 12). There is a direct hydrological pathway from the proposed development site to this SPA via the proposed connection of surface water drainage to the River Slang and an existing open channel drain which leads to the Elm Park stream. Both of these pathways outfall to Dublin Bay. Mitigation measures are required to ensure that surface water drainage will not contain silt or pollutants that could significantly impact upon the qualifying interests of these proximate Natura 2000 sites. There is an indirect pathway from the site to this SPA via the proposed foul wastewater network. Foul wastewater will be directed to the existing public combined sewage system located to the northern extremity of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The

			indirect pathway of foul water to Ringsend will not result in a significant effect on the Natura 2000 site. As outlined in Appendix I "*Black-headed gull flocks of county importance (>90 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site. Brent goose flocks of county importance (>84 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site and curlew flocks of county importance (>29 birds; 1% of the county population) were observed on two occasions commuting over the proposed development site. Flocks of importance relative to the local population (1% of the Dublin Bay I-WeBS site population) were recorded for black-headed gull on fifteen occasions, brent goose on one occasion and curlew on four occasions." "On the 4th of January, curlew were observed using an area of amenity grassland within the proposed development site for foraging. Herring gull, black-head gull, lesser black-backed gull and common gull were frequently observed using the proposed development site for foraging and roosting. Black-headed gull and herring gull were observed regularly commuting over the proposed development. Curlew and brent geese were observed commuting over the proposed development site infrequently*." Black-headed gull is a qualifying interest of this site. In addition, as outlined in Appendix II (Wintering Bird Survey) "*While some disturbance and displacement impacts may occur to the SCI species recorded, this would not be deemed to be of potential significance. This is due to the habituation of this species to anthropogenic disturbance within the site and wider urban area and its likely habitation to any disturbance resulting from the proposed development.* *Some loss of foraging habitat for this species will occur. However, this is not considered significant given the relative abundance of this habitat type (amenity grassland) within both the immediate and wider areas surrounding the site."* In a strict application of the precautionary principle, it has been concluded that significant effects on the South Dublin Bay and River Tolka Estuary SPA are likely, in the absence of mitigation measures, from the proposed works primarily as a result of the direct hydrological connection to the SPA from the proposed project, which involves works in the onsite drainage ditch and slopes leading to the drainage ditch, in addition to works that would drain the site in the vicinity of the embankments area. Mitigation measures will need to be in place to prevent silt and petrochemicals entering the drainage ditch, which has a direct pathway to this SPA. Out of an abundance of caution mitigation measures will also be required to be in place to prevent disturbance of the protected bird species located within the SPA from heightened noise levels produced by

			the construction phase of development, albeit at a significant distance. For these reasons mitigation measures are required and it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives. **Significant effects are likely - Natura Impact Statement Required**
IE0004006	North Bull Island SPA	**IN**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999] **Potential Impact** The proposed works are located within an urban area 7.5 km from the North Bull Island SPA (Figure 12). There is no direct pathway to this SPA. There is an indirect pathway from the site to the SPA via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (7.5 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SPA. Foul wastewater will be directed to the existing public combined sewage system located to the northern extremity of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SPA. As outlined in Appendix I "*Black-headed gull flocks of county importance (>90 birds; 1% of the county population) were*

			observed on one occasion commuting over the proposed development site. Brent goose flocks of county importance (>84 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site and curlew flocks of county importance (>29 birds; 1% of the county population) were observed on two occasions commuting over the proposed development site. Flocks of importance relative to the local population (1% of the Dublin Bay I-WeBS site population) were recorded for black-headed gull on fifteen occasions, brent goose on one occasion and curlew on four occasions." "On the 4th of January, curlew were observed using an area of amenity grassland within the proposed development site for foraging. Herring gull, black-head gull, lesser black-backed gull and common gull were frequently observed using the proposed development site for foraging and roosting. Black-headed gull and herring gull were observed regularly commuting over the proposed development. Curlew and brent geese were observed commuting over the proposed development site infrequently." Black-headed gull and Curlew are qualifying interests of this site. Out of an abundance of caution, the North Bull Island SPA has been screened 'IN' as, given the close proximity to the proposed development, the scale of the proposed development, the hydrological pathway of surface water to Dublin Bay, and the remote potential for noise level impacts on protected bird species during construction stages of development. Mitigation measures will be required to protect the conservation interests of this SPA. **Potential for significant effects on Qualifying Interests - Natura Impact Statement Required**

Table 3. Initial screening of NATURA 2000 sites within 15km and NATURA 2000 sites within 15km with potential of hydrological connection to the proposed development – Screened OUT

Natura Code	Name	Screened In/Out	Details/Reason
Special Areas of Conservation			
IE0002122	Wicklow Mountains SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with *Erica tetralix* [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] Calaminarian grasslands of the *Violetalia calaminariae* [6130] Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] Blanket bogs (* if active bog) [7130]

			Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Otter (*Lutra lutra*) [1355] **Potential Impact** The proposed development site is located in an urban environment 7.1 km from this SAC. No potential impact is foreseen. There is no direct or indirect pathway from the proposed development site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0001209	Glenasmole Valley SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Semi-Natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Petrifying springs with tufa formation (*Cratoneurion*) [7220] **Potential Impact** The proposed development site is located within an urban environment 9.2 km from this SAC. No potential impact is foreseen. There is no direct or indirect pathway from the proposed development site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0000725	Knocksink Wood SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Petrifying springs with tufa formation (*Cratoneurion*) [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0] **Potential Impact** The proposed development site is located within an urban environment 9.7 km from the Knocksink Wood SAC. No potential

			impact is foreseen. There is no direct or indirect hydrological pathway from the proposed development site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0003000	Rockabill to Dalkey Island SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Reefs [1170] Harbour Porpoise (*Phocoena phocoena*) [1351] **Potential Impact** The development site is located within an urban area 9.9 km from this SAC (Figure 11). There is no direct hydrological pathway from the proposed development site to the SAC. There is an indirect pathway from the site to the SAC via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (9.9 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SAC. Foul wastewater will be directed to the existing public combined sewage system located to the north west of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SAC. No potential impact is foreseen. There is no direct pathway from this site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0000713	Ballyman Glen SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Petrifying springs with tufa formation (Cratoneurion) [7220] Alkaline fens [7230] **Potential Impact** The proposed development site is located within an urban environment 11.1 km from this SAC. No potential impact is foreseen. There is no direct or indirect hydrological pathway

			from the proposed development site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0000202	Howth Head SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030] **Potential Impact** The proposed development site is located within an urban area 12.1 km from this SAC (Figure 11). There is no direct hydrological pathway from the proposed development site to the SAC. There is an indirect pathway from the site to the SAC via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (12.1 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SAC. Foul wastewater will be directed to the existing public combined sewage system located to the north west of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SAC. No potential impact is foreseen. There is no direct pathway from this site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0000199	Baldoyle Bay SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] **Potential Impact** The proposed development site is located in an urban environment 13 km from this SAC (Figure 11). There is no direct

			hydrological pathway from the proposed development site to the SAC. There is an indirect pathway from the site to the SAC via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (13 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SAC. Foul wastewater will be directed to the existing public combined sewage system located to the north west of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SAC. No potential impact is foreseen. There is no direct pathway from this site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**

Special Protection Areas			
IE0004040	Wicklow Mountains SPA	**OUT**	**Conservation Objectives** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Qualifying Interests** Merlin (*Falco columbarius*) [A098] Peregrine (*Falco peregrinus*) [A103] **Potential Impact** The proposed development site is located within an urban environment 7.4 km from this SPA. No potential impact is foreseen. There is no direct or indirect hydrological pathway from the proposed development site to the SPA. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE0004172	Dalkey Islands SPA	**OUT**	**Conservation Objectives** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Qualifying Interests** Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] **Potential Impact** The proposed development site is located within an urban environment 9.8 km from this SPA (Figure 12). There is no direct hydrological pathway from the proposed development to this SPA. There is an indirect pathway from the site to the SPA via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (9.8 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SPA. Foul wastewater will be directed to the existing public combined sewage system located to the north west of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SPA. No potential impact is foreseen. There is no direct pathway from this site to the SPA. The construction and operation of the proposed development will not impact on the conservation interests of the site.

			No significant effects likely
IE0004016	Baldoyle Bay SPA	**OUT**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Bar-tailed Godwit (*Limosa lapponica*) [A157] Wetland and Waterbirds [A999] **Potential Impact** The proposed development site is located within an urban environment 12.9 km from this SPA (Figure 12). There is no direct hydrological pathway from the proposed development to this SPA. There is an indirect pathway from the site to the SPA via the proposed foul / surface water networks. Surface water will be directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (12.9 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SPA. Foul wastewater will be directed to the existing public combined sewage system located to the north west of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SPA. No potential impact is foreseen. There is no direct pathway from this site to the SPA. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**
IE004113	Howth Head Coast SPA	**OUT**	**Conservation Objectives** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Qualifying Interests** Kittiwake (*Rissa tridactyla*) [A188] **Potential Impact** The proposed development site is located within an urban environment 14.1 km from this SPA (Figure 12). There is no direct hydrological pathway from the proposed development to this SPA. There is an indirect pathway from the site to the SPA via the proposed foul / surface water networks. Surface water will be

			directed to the River Slang and an existing open channel drain after attenuation. Due to the distance (14.1 km) via the indirect pathway, any pollutants or silt will settle, be dispersed, or diluted within the marine environment. The indirect pathway of surface water is not likely to impact on the conservation objectives of this SPA. Foul wastewater will be directed to the existing public combined sewage system located to the north west of the subject site. This network then outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works. The indirect pathway of foul water to Ringsend will not result in a significant effect on this SPA. No potential impact is foreseen. There is no direct pathway from this site to the SPA. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects likely**

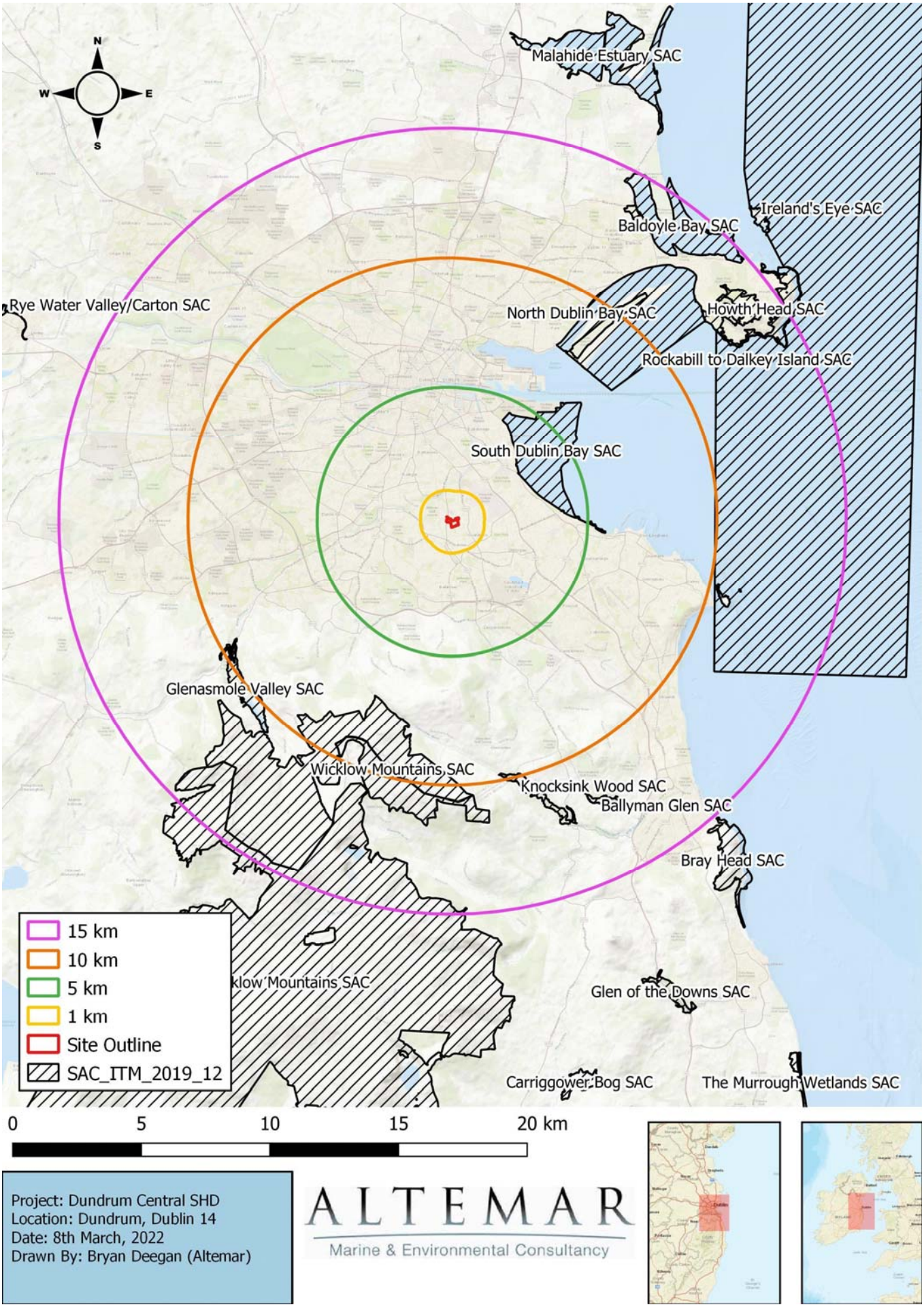


Figure 11. Special Areas of Conservation (SAC) within 15km of the proposed development site

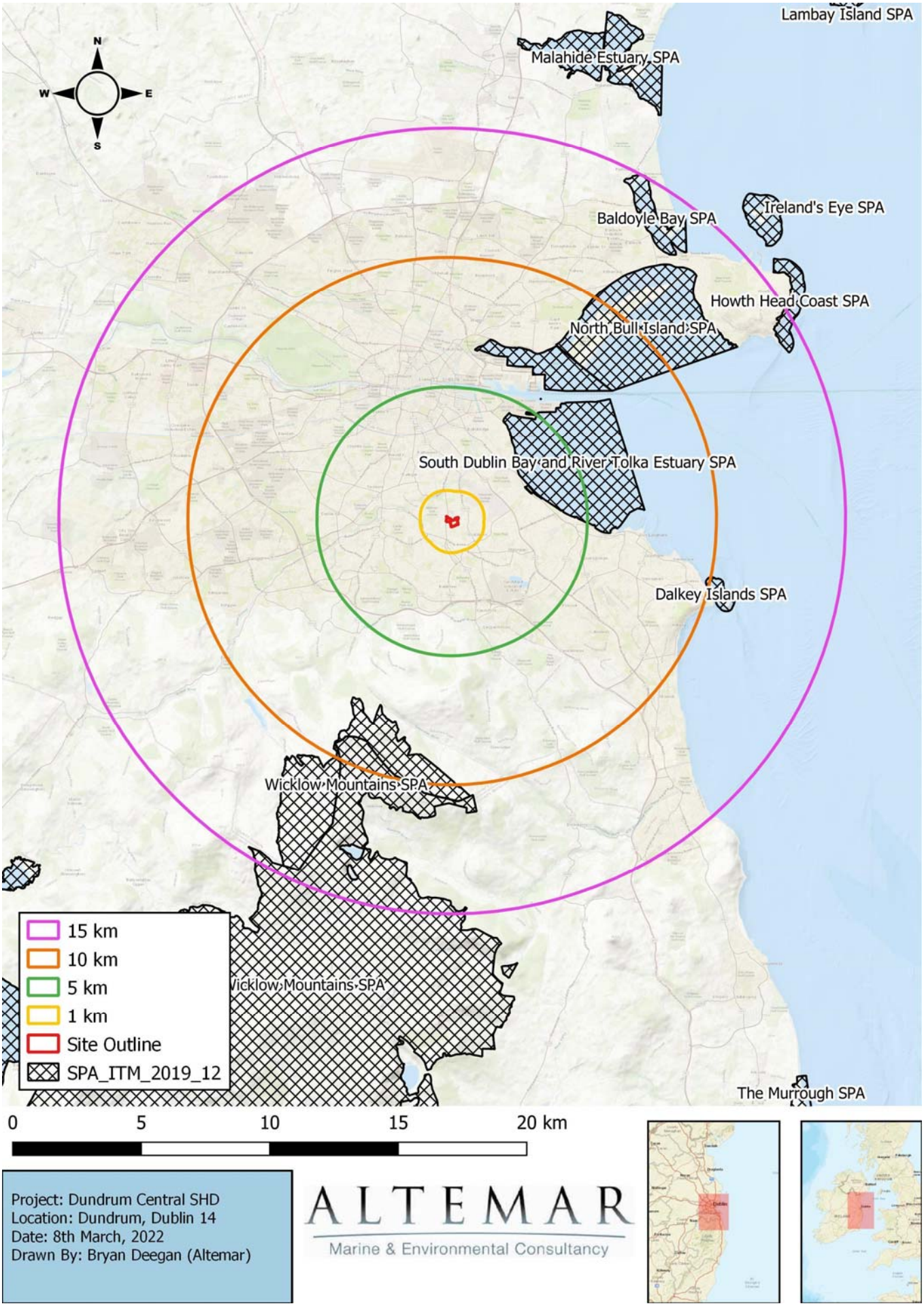


Figure 12. Special Protection Areas (SPA) within 15km of the proposed development site

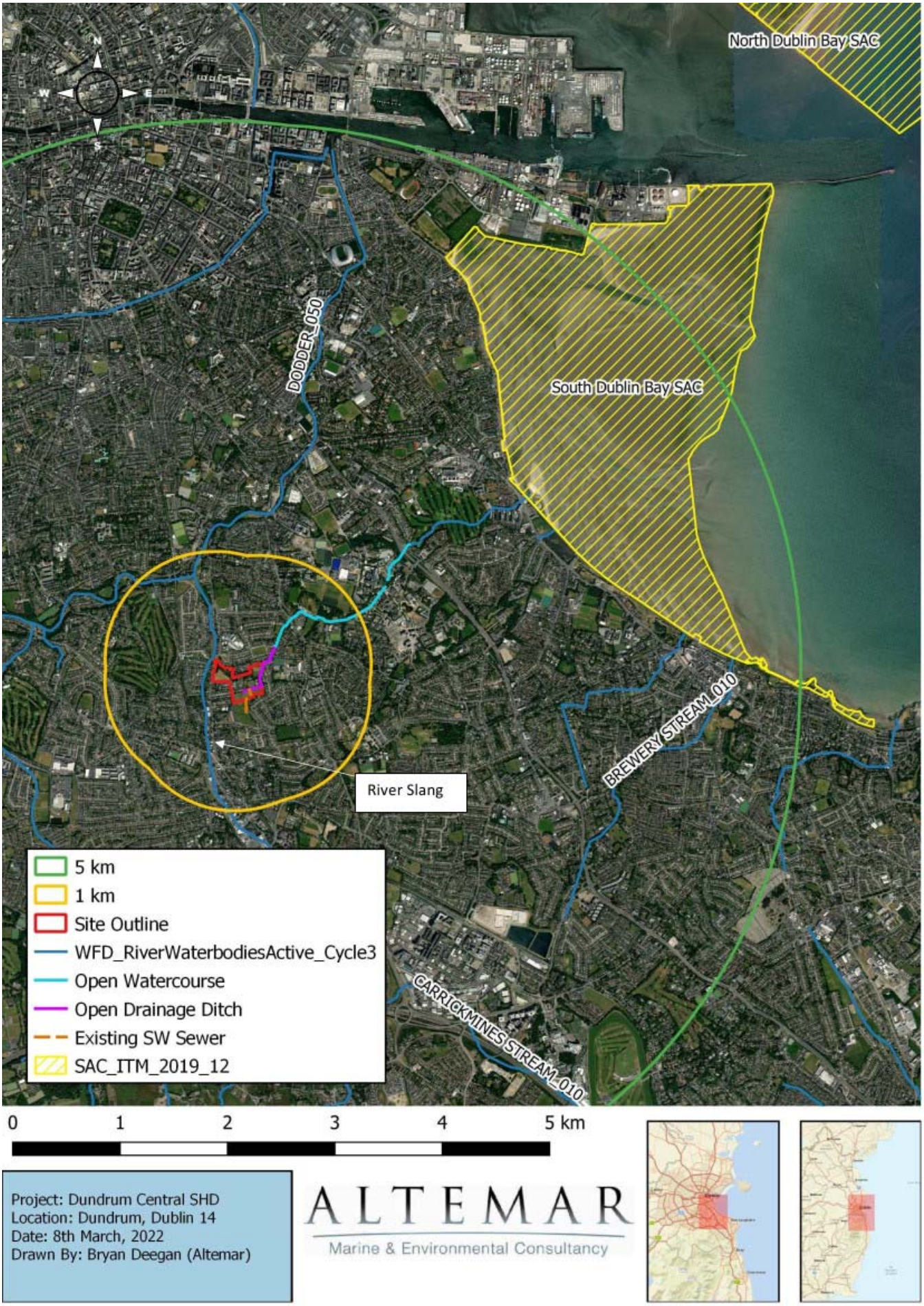


Figure 13. Waterbodies and SACs within close proximity to proposed development site

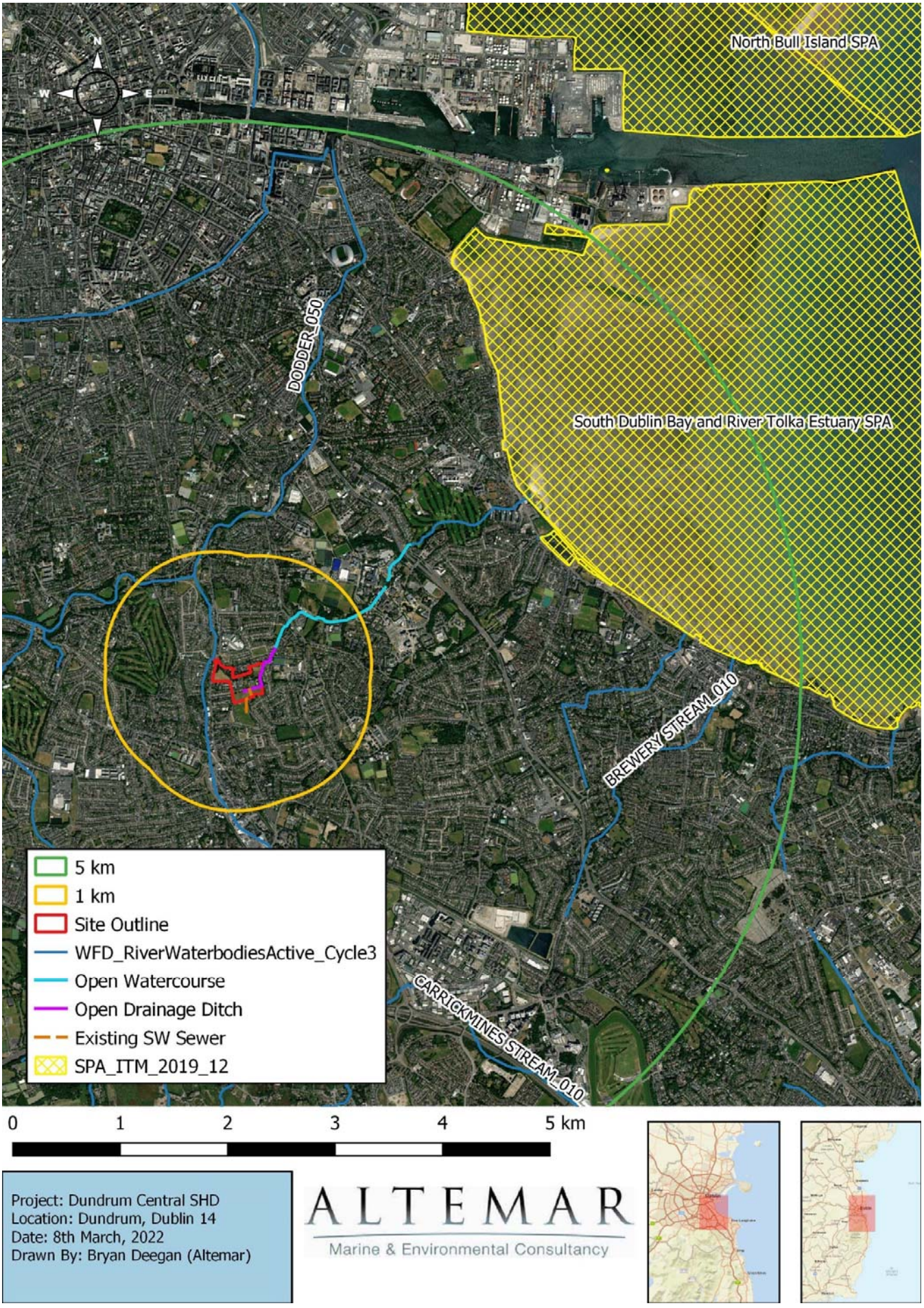


Figure 14. Waterbodies and SPAs within close proximity to proposed development site

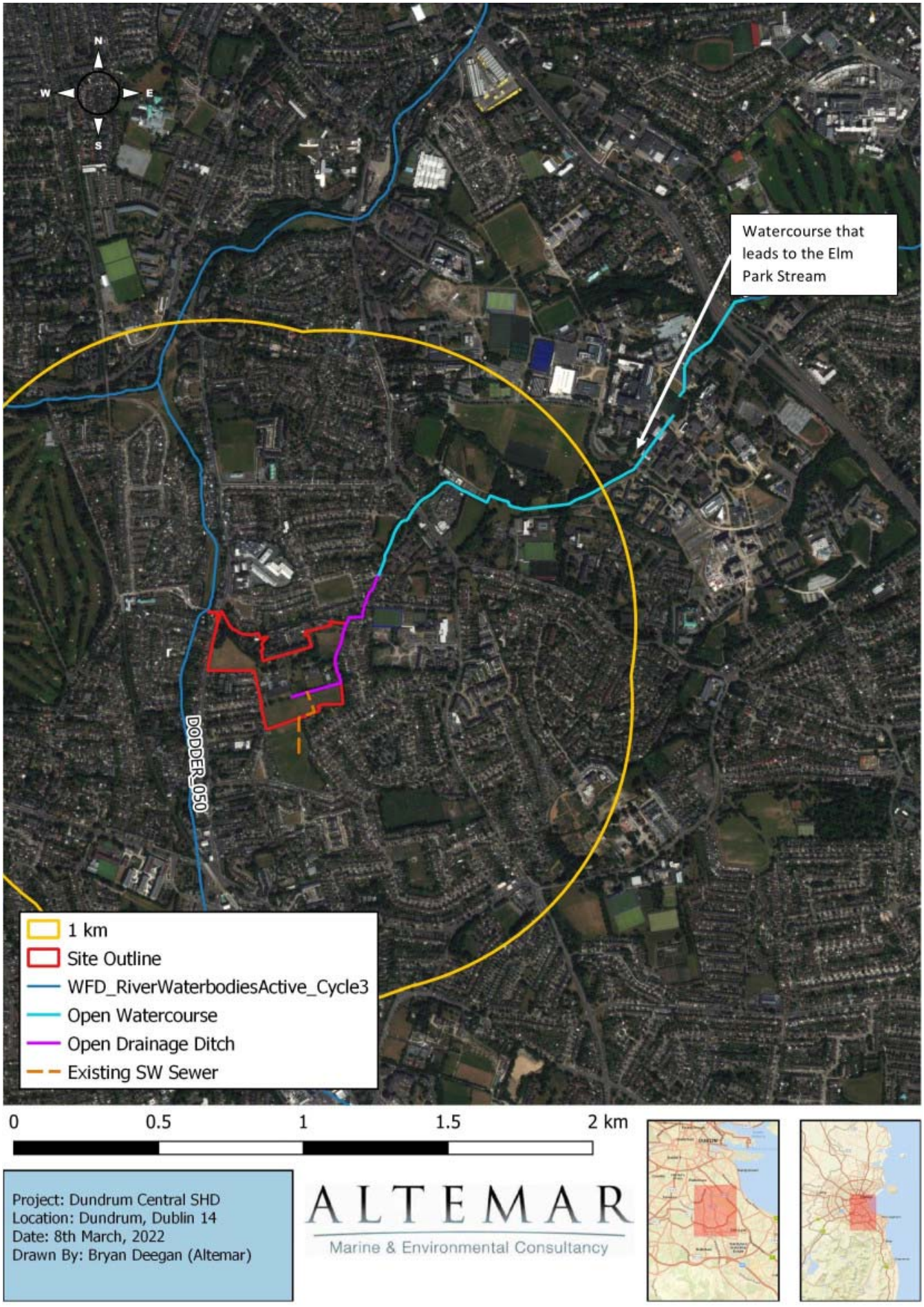


Figure 15. Location of hydrological connection to Elm Park Stream

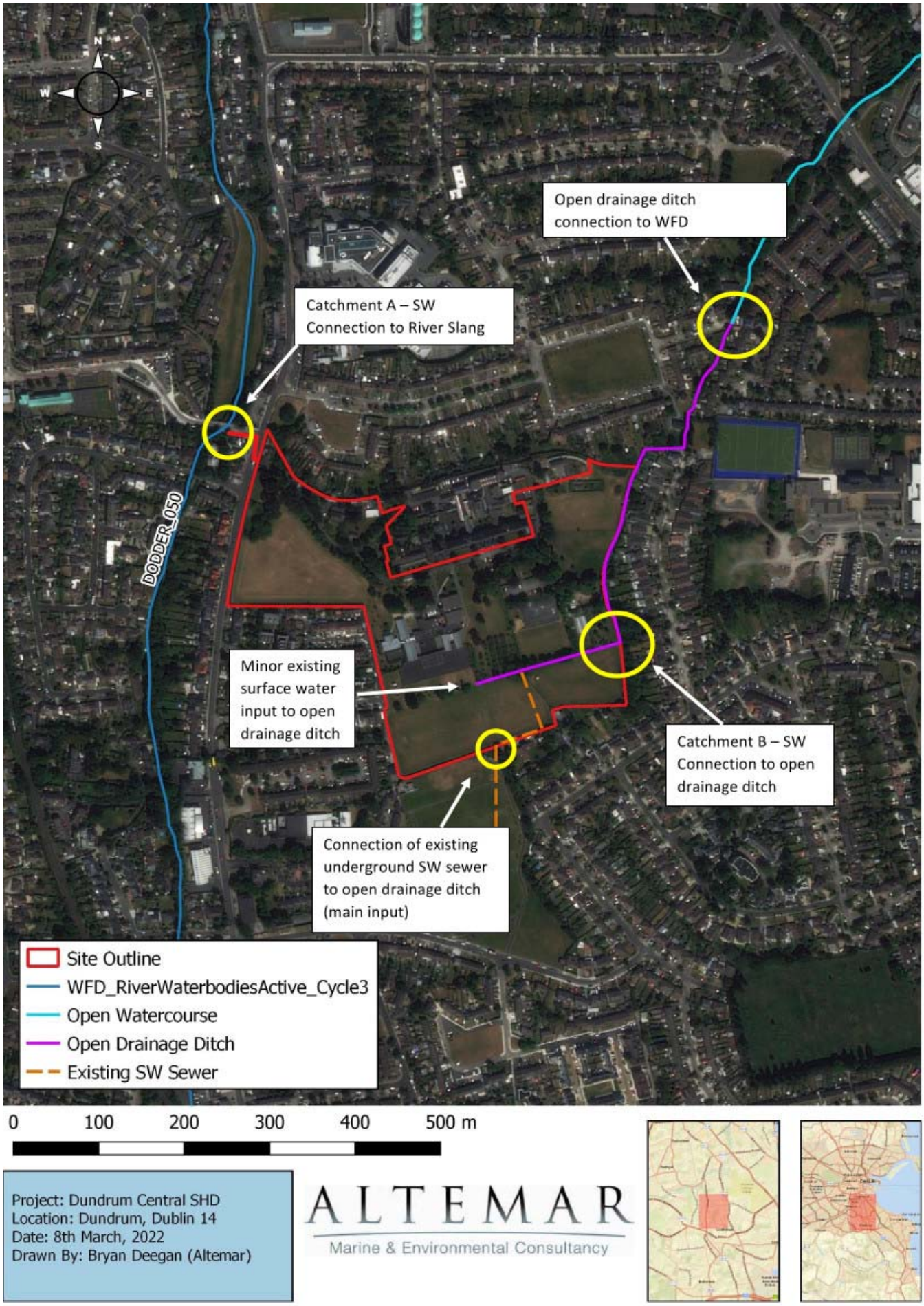


Figure 16. Outline of hydrological connections between waterbodies

In-Combination Effects

There are several proposed developments located in the area immediately surrounding the subject site. The following is a list of planning applications in close proximity to the subject site as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Database' portal[2],:

Table 4. In combination effects evaluated.

DLRCC/ ABP Reg. Ref.	Address	Decision Date	Overview of Development
D16A/0818	Site of approximately 1.23 hectares at Greenacres, Kilmacud Road Upper, Dublin 14	11th Sept 2017	- Demolition c. 425 sq m - 120 no. apartments - 120 car parking spaces - 144 bicycle spaces
ABP31013821	Mount Saint Mary's and Saint Joseph's, Dundrum Road, Dundrum, Dublin 14	25th Aug 2021	- SHD - Demolition 2,913.8 sq m - 231 no. residential units - After school childcare facility 161 sq m - Café 83 sq m - 118 no, car parking spaces - 462 no. cycle spaces - 4 no. motorcycle spaces
D19A/0162	Former Shell Garage, Roebuck Road, Clonskeagh, Dublin 14	8th August 2019	- Demolition - 43 no. residential units - 47 no. car parking spaces - 92 no. cycle parking spaces
ABP30835320	The car sales premises currently known as Vector Motors (formerly known as Victor Motors), Goatstown Road, Dublin 14, D14FD23	3rd Feb 2021	- SHD (Student accommodation) - 960 sq m demolition - 239 no. bed spaces - 6 no car parking spaces
D20A/0328	University College Dublin, Belfield, Dublin 4	21st Jan 2021	- Extension to the existing car park to provide 239 no. additional car parking spaces, resulting in a total permanent surface car park comprising 300 no. car-parking spaces (61 no. existing spaces plus 239 no. new additional spaces). - The proposed development also seeks a modification of the Athletics Track development permitted under Dun Laoghaire Rathdown County Council Reg. Ref. D19A/0001, to omit 185 no. permitted temporary car parking spaces, resulting in a total of 70 no. temporary car parking spaces being delivered as part of the permitted Athletics track development.
ABP30943021	2.12 ha at Our Lady's Grove, Goatstown Road, Dublin 14	3rd June 2021	- SHD - Student Accommodation - 698 no. bed spaces

[2] https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de

DLRCC/ ABP Reg. Ref.	Address	Decision Date	Overview of Development
			- 9 no. car parking - 4 no. motorcycle - 860 no. cycle parking
ABP31128721	c.0.9ha at No. 97A Highfield Park (D14P710), and No. 1 Frankfort Castle (D14 HY03), No. 2 Frankfort Castle (D14DE72) and Frankfort Lodge (D14C9P2), Old Frankfort, Dublin 14	20th Dec 2021	- SHD - 115 no. residential units - 80 sq m creche

Proposed Projects (in system)

DLRCC/ ABP Reg. Ref.	Address	Lodgement Date/ Status	Overview of Development
ABP31182621	Lands at Knockrabo, Mount Anville Road,, Goatstown, Dublin 14	Lodged on 1st Nov 2021 as a SHD with ABP. Decision due 28th Feb 2022. (At the time of writing, ABP had confirmed a delay surrounding the determination of this application)	SHD (Amendment to permitted Phase 2) 227 no. units (134 no. additional units from permitted SHD) 178 no. car parking spaces 519 no. bicycle spaces
TC06D.309697	Sommerville House, Dundrum Road, Dublin 14.	Lodged as a SHD Pre-Application Consultation Request with ABP. ABP feedback provided on 24th May 2021.	SHD (Consultation) 111 No. units
TC06D.311553	Old Dundrum Shopping Centre and Other Properties, Main Street, Dundrum, Dublin 14	Lodged as a SHD Pre-Application Consultation Request with ABP. ABP feedback provided on 14th Jan 2022.	SHD (Consultation) 884 no. apartments Creche
N/A	Lands at Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14	Pre-application engagement commenced with DLRCC. Planning application due to be lodged with DLRCC when the SHD (the proposed project) has been decided.	3,540 sq m demolition 71 no. residential units 5,566 sq m non-residential floorspace 60 no. car parking spaces

No Potential Cumulative Impacts are foreseen. The development will have to incorporate measures to protect water quality in compliance with legislative standards for receiving water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019).

Given this, it is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on Natura 2000 sites will be seen as a result of the proposed development in combination with other projects. No in combination effects are foreseen.

No projects in the vicinity of the proposed development would be seen to have a significant in combination effect on Natura 2000 sites.

Conclusions

An initial screening of the proposed works, using the precautionary principle (without the use of any mitigation measures) and the Source/Pathway/Receptor links between the proposed works and Natura 2000 sites with the potential to result in significant effects on the conservation objectives and qualifying interests of the Natura 2000 sites was carried out in Table 1. Based on best scientific knowledge and objective information and assessment, the possibility of significant effects caused by the proposed project was excluded for the following Natura 2000 sites:

Special Areas of Conservation

(000199) Baldoyle Bay SAC
(003000) Rockabill to Dalkey Island SAC
(000202) Howth Head SAC
(002122) Wicklow Mountains SAC
(001209) Glenasmole Valley SAC
(000725) Knocksink Wood SAC
(000713) Ballyman Glen SAC

Special Protection Areas

(004016) Baldoyle Bay SPA
(004172) Dalkey Islands SPA
(004040) Wicklow Mountains SPA
(004113) Howth Head SPA

The project is limited in scale and extent and the potential zone of influence is restricted to the immediate vicinity of the proposed development. However, in the absence of mitigation measures there is potential for petrochemicals or silt laden material to enter the marine environment at South Dublin Bay SAC, North Dublin Bay, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA.

Acting on a strictly precautionary basis, NIS is required in respect of the effects of the project on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA because it cannot be excluded on the basis of best objective scientific information following screening, in the absence of control or mitigation measures, that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

An NIS or Stage 2 Appropriate Assessment is not required for the effects of the project on all other listed Natura sites above and beyond 15km, because it can be excluded on the basis of the best objective scientific information following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the European Site/s.

NIS is required for South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA.

Stage 2: Natura Impact Statement

A Natura Impact Statement (NIS) is Stage 2 of the Appropriate Assessment process. In the case of the proposed SHD on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14, acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on South Dublin Bay SAC, North Dublin Bay SAC (due to the potential for downstream impacts during construction and operation), South Dublin Bay and River Tolka Estuary, and North Bull Island SPA (due to the potential for downstream impacts during construction and operation, and due to the potential for noise level disturbances during construction resulting in significant impacts on protected bird species) because it cannot be excluded on the basis of best objective scientific information, in the absence of control or mitigation measures, following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

A Stage 2 Appropriate Assessment or NIS is not required for the effects of the project on all other listed Natura sites within, and sites beyond, 15km because, it can be excluded, on the basis of the best objective scientific information following screening, that the plan or project, individually and/or in combination with other plans or projects, will have not a significant effect on the European Site/s.

The NIS evaluates the potential for direct, indirect effects, alone or in combination with other plans and projects having taken into account the use of mitigation measures. The NIS is informed by the accompanying EIAR and CEMP including the proposed mitigation measures that are outlined to reduce the potential effects of the proposed project on species/habitats of conservation importance and the surrounding environment.

A further review of the Conservation Objectives and qualifying interests is necessary to determine if significant effects are likely to impact the identified Natura 2000 sites.

South Dublin Bay SAC (Site code: 000210)

As outlined in the South Dublin Bay SAC Site Synopsis[3] (NPWS, version date 10.12.2015):

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

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

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

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

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

[3] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000210.pdf

line vegetation. As this is of very recent origin, it covers a small area but ample areas of substrate and shelter are available for the further development of this habitat.

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

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

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

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

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

The Natura 2000 Standard Data Form (2020)[4] states that:

'*This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5 km. At their widest, the intertidal flats extend for almost 3 km. The seaward boundary is marked by the low tide mark, while the landward boundary is now almost entirely artificially embanked. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. A number of small streams and drains flow into the site. The proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes.*

Site possesses a fine and fairly extensive example of intertidal flats. Sediment type is predominantly sand, with muddy sands in the more sheltered areas. A typical macro-invertebrate fauna exists. Has the largest stand of Zostera on the east coast. Supports part of the important wintering waterfowl populations of Dublin Bay. Regularly has an internationally population of Branta bernicila horta, plus nationally important numbers of at least a further 6 species, including Limosa lapponica. Regular autumn roosting ground for significant numbers of Sterna terns, including S. dougallii. The scientific interests of the site have been well documented.'

As outlined in the Conservation objectives supporting document[5] (NPWS, 2013), it is an objective:

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

Target 1: *''The permanent habitat area is stable or increasing, subject to natural processes.''*

Target 2: *''Maintain the extent of the Zostera-dominated community, subject to natural processes.''*

Target 3: *''Conserve the high quality of the Zostera-dominated community, subject to natural processes.''*

Target 4: *''Conserve the following community type in a natural condition: Fine sands with Angulus tenuis community complex.'*

[4] https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000210.pdf

[5] https://www.npws.ie/sites/default/files/publications/pdf/000210_South%20Dublin%20Bay%20SAC%20Marine%20Supporting%20Doc_V1.pdf

Figure 1. Extent of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC

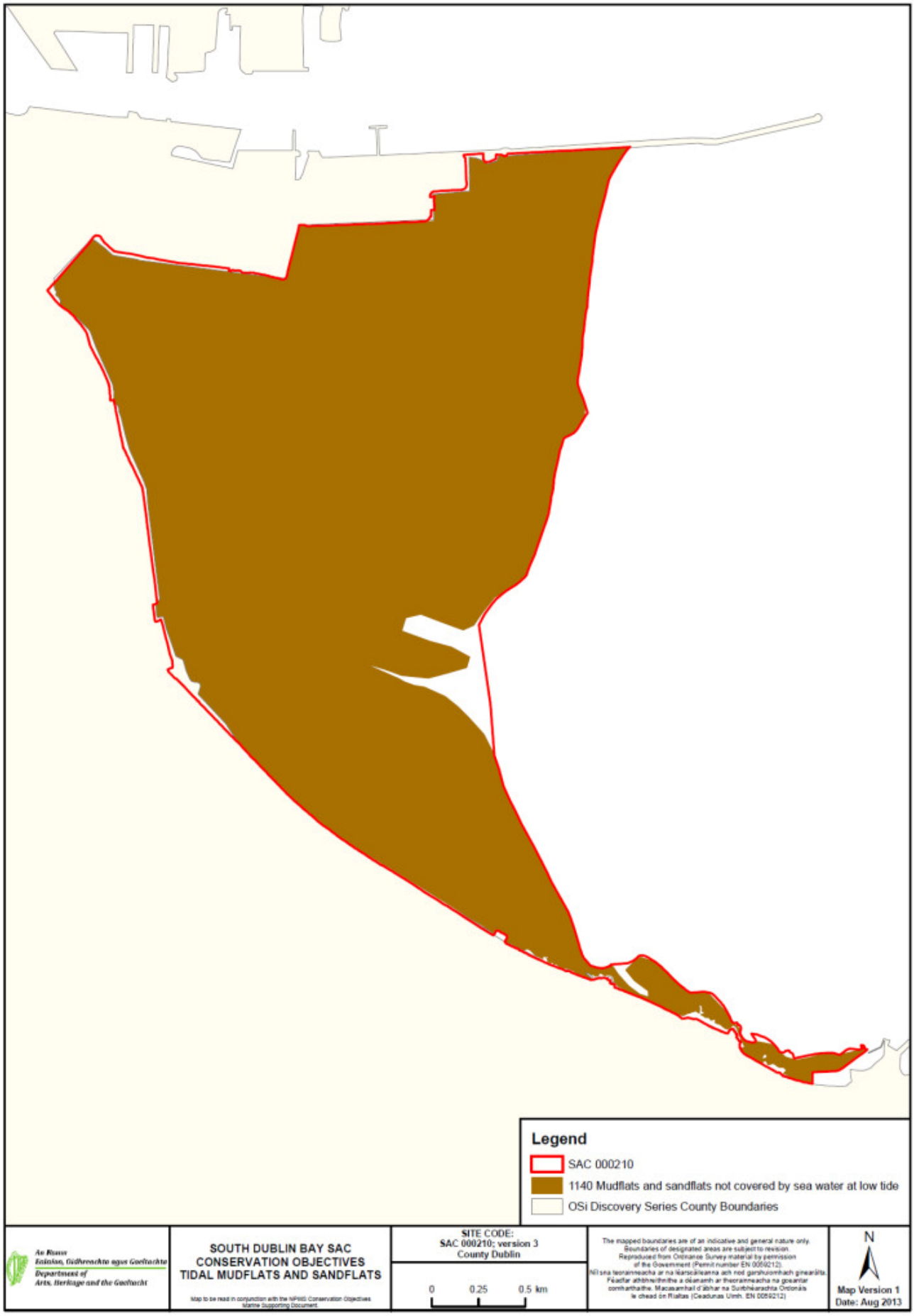
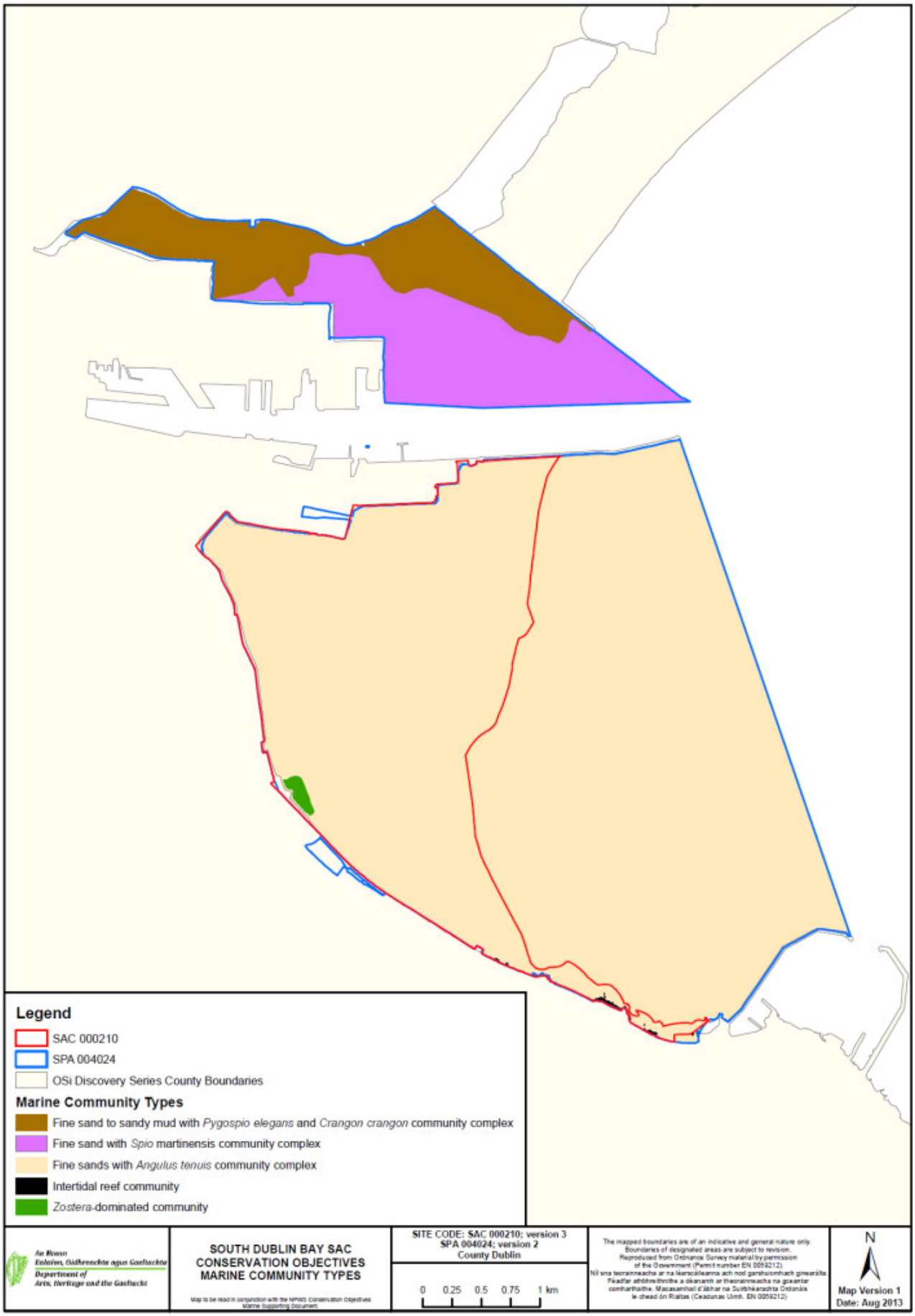


Figure 2. Distribution of community types in South Dublin Bay SAC



North Dublin Bay SAC (Site code: 000206)

As outlined in the North Dublin Bay SAC Site Synopsis[6] (NPWS, version date 12.08.2013):

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

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

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

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

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

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

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

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "Salicornia flat", which is dominated by Salicornia dolichostachya, a pioneer glasswort species, and covers about 25 ha. Beaked Tasselweed (Ruppia maritima) occurs in this area, along with some Narrow-leaved Eelgrass (Zostera angustifolia). Dwarf Eelgrass (Z. noltii) also occurs in Sutton Creek. Common Cordgrass (Spartina

[6] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000206.pdf

anglica) occurs in places but its growth is controlled by management. Green algal mats (Enteromorpha spp., Ulva lactuca) cover large areas of the flats during summer. These sediments have a rich macrofauna, with high densities of Lugworms (Arenicola marina) in parts of the north lagoon. Mussels (Mytilus edulis) occur in places, along with bivalves such as Cerastoderma edule, Macoma balthica and Scrobicularia plana. The small gastropod Hydrobia ulvae occurs in high densities in places, while the crustaceans Corophium volutator and Carcinus maenas are common. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

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

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

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

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

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

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

The Natura 2000 Standard Data Form (2020)[7] states that:

'*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*

[7] https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000206.pdf

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.

Site possesses an excellent diversity of coastal habitats. The North Bull Island dune system is one of the most important systems on the east coast and is one of the few in Ireland that is actively accreting. It possesses extensive and mostly good quality examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Both Atlantic and Mediterranean salt marshes are well represented and a particularly good marsh zonation is shown. The salt marshes grade into mudflats and sandflats, some of which are dominated by annual Salicornia species. Petalophyllum ralfsii occurs at its only known station away from the western seaboard. The site has five Red Data Book vascular plant species and four Red Data Book bryophyte species. This is one of the most important sites for wintering waterfowl in Ireland, with internationally important populations of Branta bernicla horta, Calidris canutus and Limosa lapponica, plus nationally important numbers of a further 14 species. 20% of the national total of Pluvialis squatarola occurs here. Formerly it had important colony of Sterna albifrons. North Dublin Bay is nationally important for three insect species. The scientific interests of the site have been well documented and future prospects are good owing to the various designations assigned to site.'

As outlined in the Conservation objectives supporting document (NPWS, 2013):

'*North Dublin Bay SAC (site code: 206) is designated for a range of coastal habitats, including mudflats and salt flats, saltmarsh and sand dunes. The following eight coastal habitats are included in the qualifying interests for the site (* denotes a priority habitat):*

- *Salicornia and other annuals colonising mud and sand (1310)*
- *Atlantic salt meadows (Glauco-Puccinellietalia maritimae) (ASM) (1330)*
- *Mediterranean salt meadows (Juncetaliea maritimi) (MSM) (1410)*
- *Annual vegetation of drift lines (1210)*
- *Embryonic shifting dunes (2110)*
- *Shifting dunes along the shoreline with Ammophila arenaria (white dunes) (2120)*
- *Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130)**
- *Humid dune slacks (2190)*

The first three are saltmarsh habitats and the last five are associated with sand dune systems, although all eight of these habitats are found in close association with each other (McCorry, 2007; Ryle et al., 2009; Delaney et al., 2013).

This backing document sets out the conservation objectives for the eight coastal habitats listed above in North Dublin Bay SAC, which are defined by a list of parameters, attributes and targets. The main parameters are (a) Range (b) Area and (c) Structure and Functions, the last of which is broken down into a number of attributes, including physical structure, vegetation structure and vegetation composition.

The targets set for the saltmarsh habitats are based primarily on the results of the Saltmarsh Monitoring Project (SMP) (McCorry, 2007; McCorry & Ryle, 2009) and this document should be read in conjunction with those reports.'

An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

MAP 3:
NORTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
TIDAL MUDFLATS AND SANDFLATS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000206; version 3.
CO. DUBLIN

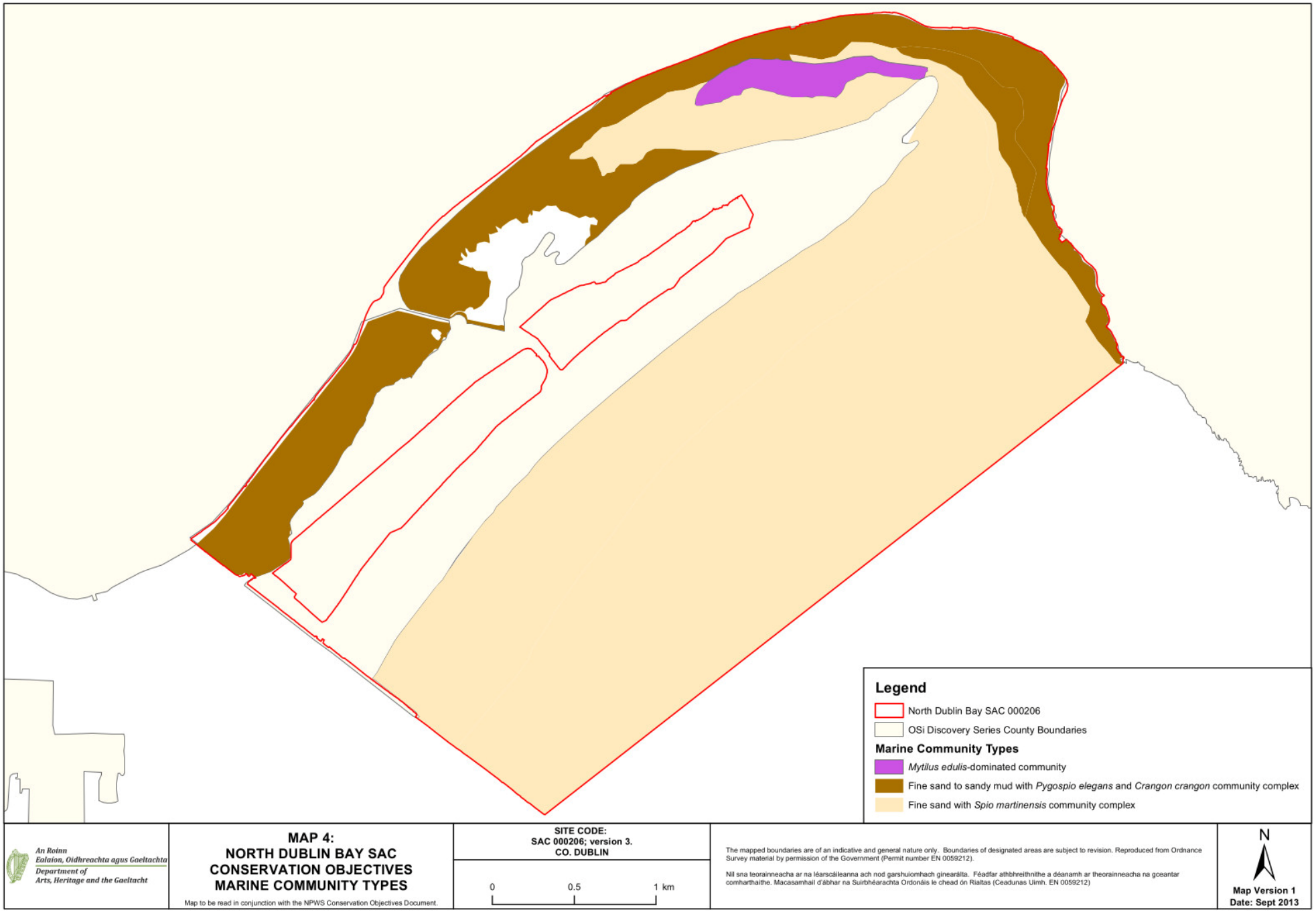
0 0.5 1 km

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision. Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).

Nil sna teorainneacha ar na léarscáileanna ach nod garshuíomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212).

N

Map Version 1
Date: Sept 2013



An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

MAP 4:
NORTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
MARINE COMMUNITY TYPES

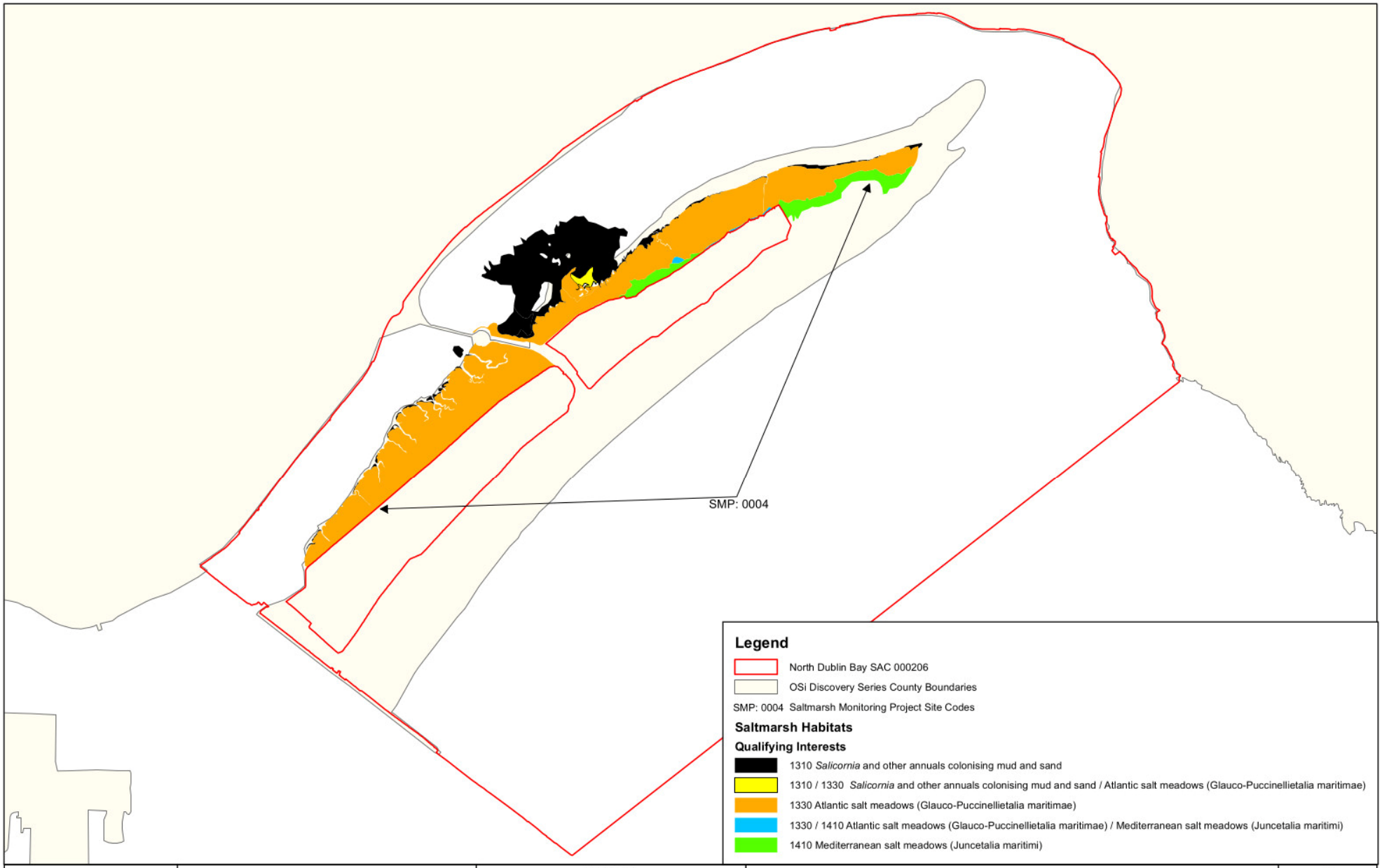
Map to be read in conjunction with the NPWS Conservation Objectives Document.

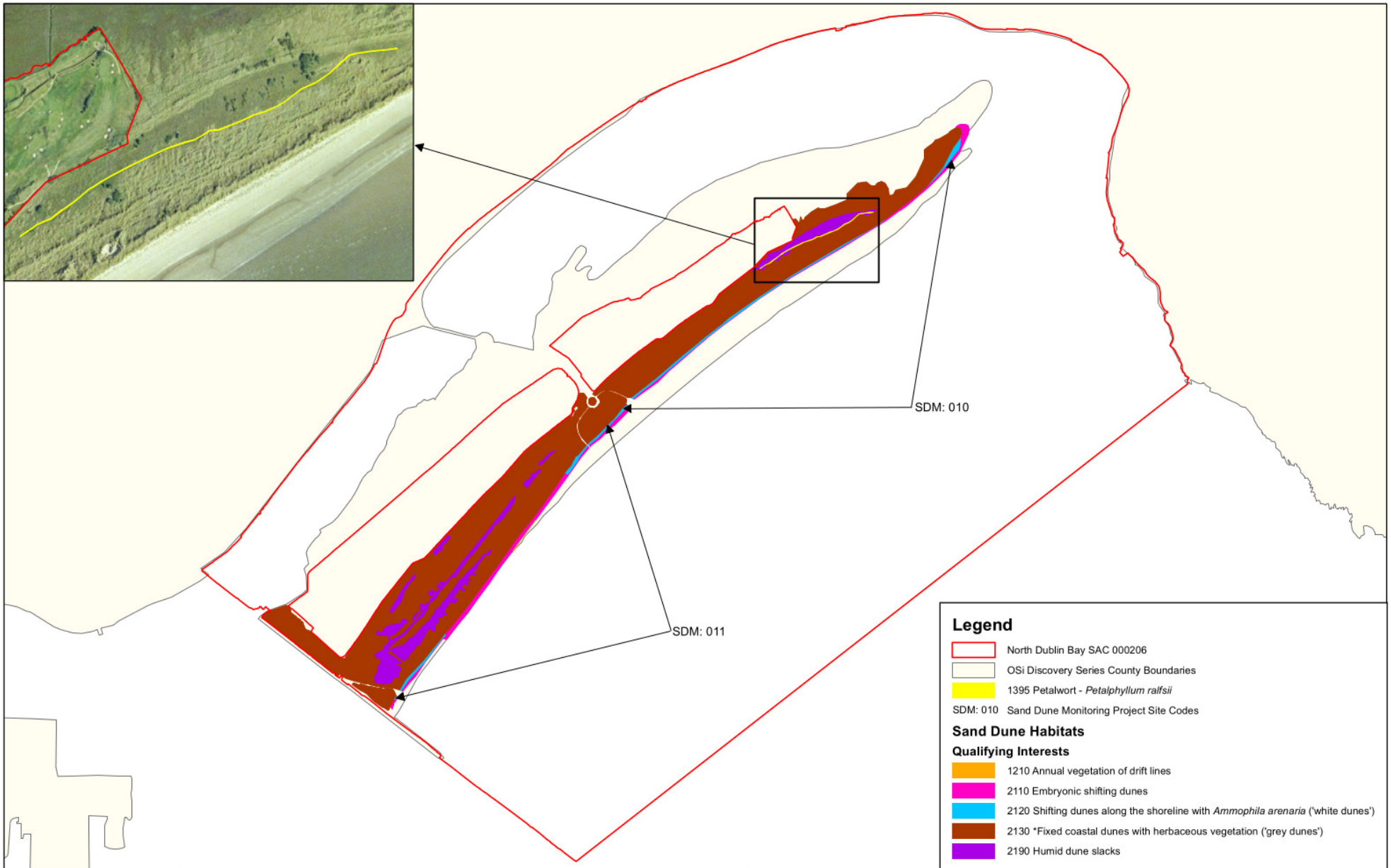
SITE CODE:
SAC 000206; version 3.
CO. DUBLIN

0 0.5 1 km

N

Map Version 1
Date: Sept 2013


SMP: 0004
Legend
North Dublin Bay SAC 000206
OSi Discovery Series County Boundaries
SMP: 0004 Saltmarsh Monitoring Project Site Codes
Saltmarsh Habitats
Qualifying Interests
1310 Salicornia and other annuals colonising mud and sand
1310 / 1330 Salicornia and other annuals colonising mud and sand / Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
1330 / 1410 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) / Mediterranean salt meadows (Juncetalia maritimi)
1410 Mediterranean salt meadows (Juncetalia maritimi)
An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht
MAP 5:
NORTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
SALTMARSH HABITATS
Map to be read in conjunction with the NPWS Conservation Objectives Document.
SITE CODE:
SAC 000206; version 3.
CO. DUBLIN
0
0.5
1 km
The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision. Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Nil sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe. Macasamhail d'ábhar na Suirbhéarachta Ordonáis le chead ón Rialtas (Ceadunas Uimh. EN 0059212)
N
Map Version 1
Date: Sept 2012



An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

MAP 6:
NORTH DUBLIN BAY SAC
CONSERVATION OBJECTIVES
SAND DUNE HABITATS & PETALWORT

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 000206; version 3.
CO. DUBLIN

0 0.5 1 km

N

Map Version 1
Date: Sept 2013

South Dublin Bay and River Tolka (Site code: 004024)

As outlined in the South Dublin Bay SAC Site Synopsis[8]. (NPWS, version date 30.05.2015):

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

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

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

The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex – all counts for wintering waterbirds are five year mean peaks for the period 1995/96 to 1999/2000. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. An internationally important population of Light-bellied Brent Goose (368) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at Merrion. At the time of designation the site supported nationally important numbers of a further nine species: Oystercatcher (1,145), Ringed Plover (161), Grey Plover (45), Knot (548), Sanderling (321), Dunlin (1,923), Bar-tailed Godwit (766), Redshank (260) and Black-headed Gull (3,040). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (127) and Turnstone (52). Little Egret, a species which has recently colonised Ireland, also occurs at this site.

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

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

South Dublin Bay is an important staging/passage site for a number of tern species in the autumn (mostly late July to September). The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the

[8] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004024.pdf

Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. This site is selected for designation for its autumn tern populations: Roseate Tern (2,000 in 1999), Common Tern (5,000 in 1999) and Arctic Tern (20,000 in 1996).

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

The Natura 2000 Standard Data Form (2021)[9] states that:

'*This site comprises a substantial part of Dublin Bay. It includes virtually all of the intertidal area in the south bay, as well as much of the Tolka Estuary to the north of the River Liffey. A portion of the shallow bay waters is also included. In the south bay, the intertidal flats extend for almost 3 km at their widest. The sediments are predominantly well-aerated sands. The sands support the largest stand of Zostera noltii on the East Coast. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The landward boundary is now almost entirely artificially embanked. Sediments in the Tolka Estuary vary from soft thixotrophic muds with a high organic content in the inner estuary to exposed, well aerated sands off the Bull Wall. The proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes.*

The site possesses extensive intertidal flats which support wintering waterfowl which are part of the overall Dublin Bay population. It regularly has an internationally important population of Branta bernicla hrota, which feeds on Zostera noltii in the autumn. It has nationally important numbers of a further 6 species: Haematopus ostralegus, Charadrius hiaticula, Calidris canutus, Calidris alba, Calidris alpina and Limosa lapponica. It is an important site for wintering gulls, especially Larus ridibundus and Larus canus. South Dublin Bay is the premier site in Ireland for Larus melanocephalus, with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including Sterna dougallii, S. hirundo and S. paradisaea.'

According to the conservation Objectives Supporting Document[10] (NPWS 2014) for the South Dublin Bay and River Tolka Estuary SPA:

'*The overarching Conservation Objective for North Bull Island Special Protection Area, and for South Dublin Bay and River Tolka Estuary Special Protection Area, is to ensure that waterbird populations and their wetland habitats are maintained at, or restored to, favourable conservation condition. This includes, as an integral part, the need to avoid deterioration of habitats and significant disturbance; thereby ensuring the persistence of site integrity.*

The site should contribute to the maintenance and improvement where necessary, of the overall favourable status of the national resource of waterbird species, and continuation of their long-term survival across their natural range.

Conservation Objectives for North Bull Island Special Protection Area, and for South Dublin Bay and River Tolka Estuary Special Protection Area, based on the principles of favourable conservation status, are described below and summarised in Table 3.1. Note that these objectives should be read and interpreted in the context of information and advice provided in additional sections of this report.

Objective 1: To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA.

[9] https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004024.pdf

[10] *Note that 'population' refers to site population (numbers wintering at the site) rather than the species biogeographic population.*
https://www.npws.ie/sites/default/files/publications/pdf/South%20Dublin%20Bay%20and%20River%20Tolka%20Estuary%20SPA%20(004024)%20Conservation%20objectives%20supporting%20document%20-%20[Version%201].pdf

This objective is defined by the following attributes and targets:

- *To be favourable, the long term population trend for each waterbird Special Conservation Interest species should be stable or increasing[11]. Waterbird populations are deemed to be unfavourable when they have declined by 25% or more, as assessed by the most recent population trend analysis.*
- *To be favourable, there should be no significant decrease in the range, timing or intensity of use of areas by the waterbird species of Special Conservation Interest, other than that occurring from natural patterns of variation.*

Factors that can adversely effect the achievement of Objective 1 include:

- *Habitat modification: activities that modify discreet areas or the overall habitat(s) within the SPA in terms of how one or more of the listed species use the site (e.g. as a feeding resource) could result in the displacement of these species from areas within the SPA and/or a reduction in their numbers (for further discussion on this topic please refer to Section 5.4).*
- *Disturbance: anthropogenic disturbance that occurs in or near the site and is either singular or cumulative in nature could result in the displacement of one or more of the listed waterbird species from areas within the SPA, and/or a reduction in their numbers (for further discussion on this topic please refer to Section 5.4).*
- *Ex-situ factors: several of the listed waterbird species may at times use habitats situated within the immediate hinterland of the SPA or in areas ecologically connected to it. The reliance on these habitats will vary from species to species and from site to site. Significant habitat change or increased levels of disturbance within these areas could result in the displacement of one or more of the listed waterbird species from areas within the SPA, and/or a reduction in their numbers (for further information on this topic please refer to Section 5.2).*

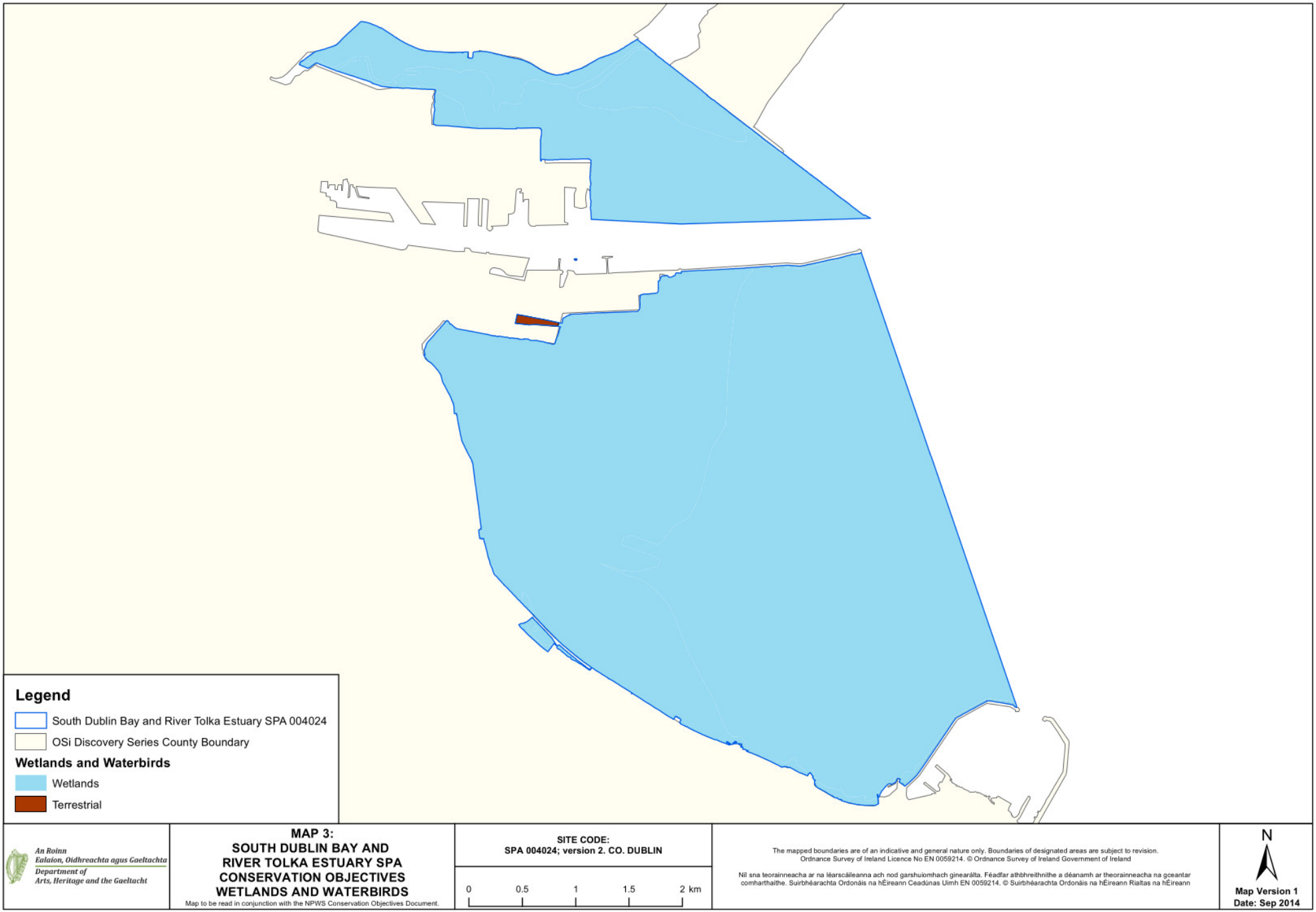
Objective 2. To maintain the favourable conservation condition of the wetland habitat at North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas.

This objective is defined by the following attributes and targets:

- *To be favourable, the permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 3,904 ha, other than that occurring from natural patterns of variation.*

This objective seeks to maintain the permanent extent of the wetland habitats that are contained within the boundary of these two SPAs, and which constitute an important resource for regularly-occurring migratory waterbirds (note that the total designated area also contains some non-wetland habitat).'

11



An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

MAP 3:
SOUTH DUBLIN BAY AND RIVER TOLKA ESTUARY SPA CONSERVATION OBJECTIVES WETLANDS AND WATERBIRDS
Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SPA 004024; version 2. CO. DUBLIN

0 0.5 1 1.5 2 km

N

Map Version 1
Date: Sep 2014

North Bull Island SPA (Site code: 004006)

As outlined in the North Bull Island SPA Site Synopsis[12] (NPWS, version date 25.03.2014)

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

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

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

The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) - all figures are mean peaks for the five winters between 1995/96 and 1999/2000. The site is one of the most important in the country for Light-bellied Brent Goose. A further 14 species have populations of national importance – Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Grey Plover (517), Golden Plover (2,033), Knot (2,837), Sanderling (141), Dunlin (4,146), Curlew (937), Redshank (1,431), Turnstone (157) and Black-headed Gull (2,196). The populations of Pintail and Knot are of particular note as they comprise 14% and 10% respectively of the all-Ireland population totals. Other species that occur regularly in winter include Grey Heron, Little Egret, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser, Ringed Plover and Greenshank. Gulls are a feature of the site during winter and, along with the nationally important population of Black-headed Gull (2,196), other species that occur include Common Gull (332) and Herring Gull (331). While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

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

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

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

[12] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004006.pdf

The Natura 2000 Standard Data Form (2020)[13] states that:

'*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 landuse 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 North Bull Island SPA Conservation Objectives Supporting Document[14] (NPWS, 2014) states the following:

'*North Bull Island lies roughly parallel to the shore and is a low-lying sandy spit, about 4.85 km long and 0.70 km wide (McCorry & Ryle, 2009a). It is a relatively recent geomorphological feature having emerged as a result of the build up of sediment over the last 200 years following the construction of the South and North Bull walls during the 18th and 19th centuries. The North Bull Wall marks the southern boundary of the island and is connected to the mainland by a wooden bridge. The island is actively accreting (Ryle et al. 2009a). A sandy beach, Dollymount Strand, occurs on the seaward side of the island and intertidal mudflats occur on the inner (mainland side) fringed by saltmarsh. A causeway built in 1965 provides the main access to the island and divides the intertidal flats into two areas known as the North and South Bull lagoons. Both of these are covered completely by most tides and are drained by permanent channels; the southern lagoon fills and empties beneath Bull Bridge, while water in the northern lagoon is channelled in and out through Sutton Creek (Harris, 1977). These lagoons provide the main feeding grounds for the wintering waterfowl while the fringing saltmarsh provides the main roost site for wintering birds in Dublin Bay. Macroalgal mats of filamentous Ulva spp. (formerly Enteromorpha spp.) 1 are prevalent.*

North Bull Island is one of the finest sand dune systems in Ireland and is internationally important in terms of conservation value (McCorry & Ryle, 2009a). It has several high quality examples of rare and threatened coastal habitats and a wealth of biodiversity, which includes several habitats and species listed in Annexes I and II of the EU Habitats Directive. As a consequence, North Bull Island is afforded several other nature conservation designations alongside its status as a Special Protection Area. It was designated as an official bird sanctuary under the Wild Bird Protection Act, 1931, the first bird sanctuary in Ireland (McCorry & Ryle, 2009a), and was established as a National Nature Reserve in 1988 (two parts covered by S.I. 231 and S. I. 232 of 1988). The site

[13] https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004006.pdf

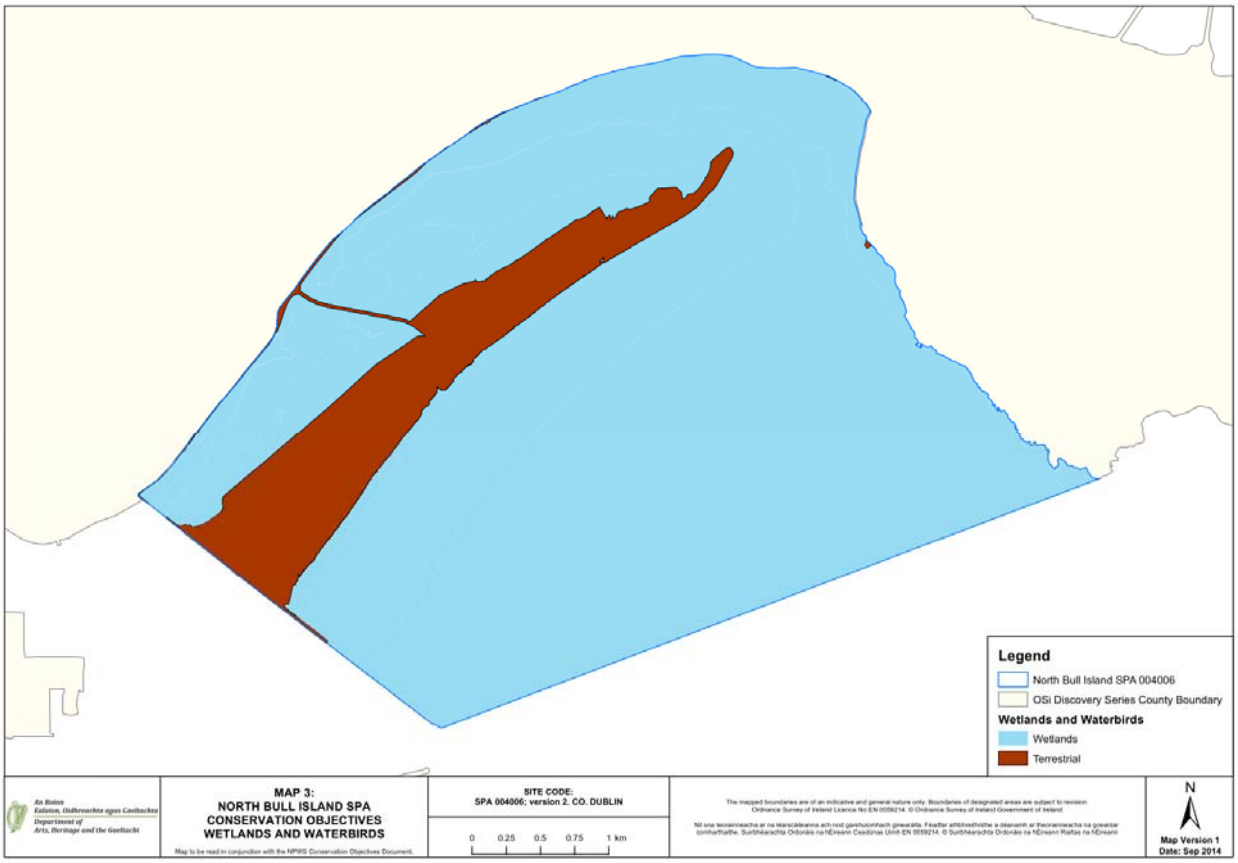
[14] https://www.npws.ie/sites/default/files/publications/pdf/North%20Bull%20Island%20SPA%20(004006)%20Conservation%20objectives%20supporting%20document%20-%20[Version%201].pdf

has been designated as part of a Special Area of Conservation (North Dublin Bay SAC - NPWS site code 000206). North Bull Island is also a Biogenetic Reserve (Council of Europe) and a UNESCO World Biosphere Reserve.'

The following objectives have been identified:

'Objective 1: *To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA*

Objective 2: *To maintain the favourable conservation condition of the wetland habitat at North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas.'*



The Qualifying Interests (QI) (Features of Interest), Special Conservation Interests (SCIs) for the SAC and SPA sites and the National conservation status of the Natura 2000 sites subject to the NIS are seen in Table 5. The site specific conservation Objectives for Natura 2000 sites are seen in Table 6.

***Table 5**. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for Natura 2000 sites*

Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
Natura 2000 Site Name & Code	Qualifying Interests	Current Conservation Status & Trend
Special Areas of Conservation (SAC)		
South Dublin Bay SAC (000210)	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]	**Inadequate** **Inadequate** **Favourable** **Inadequate**
North Dublin Bay SAC (000206)	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (*Petalophyllum ralfsii*) [1395]	**Inadequate** **Inadequate** **Favourable** **Inadequate** **Inadequate** **Inadequate** **Inadequate** **Bad** **Inadequate** **Favourable**
Special Protection Areas (SPA)		
South Dublin Bay and River Tolka Estuary SPA (004024)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]	**Amber** **Amber** **Green** **Amber** **Amber** **Green** **Red** **Amber** **Red** **Red** **Amber** **Amber** **Amber** **N/A**

North Bull Island SPA (004006)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	**Amber**
	Shelduck (*Tadorna tadorna*) [A048]	**Amber**
	Teal (*Anas crecca*) [A052]	**Amber**
	Pintail (*Anas acuta*) [A054]	**Red**
	Shoveler (*Anas clypeata*) [A056]	**Red**
	Oystercatcher (*Haematopus ostralegus*) [A130]	**Amber**
	Golden Plover (*Pluvialis apricaria*) [A140]	**Red**
	Grey Plover (*Pluvialis squatarola*) [A141]	**Amber**
	Knot (*Calidris canutus*) [A143]	**Amber**
	Sanderling (*Calidris alba*) [A144]	**Green**
	Dunlin (*Calidris alpina*) [A149]	**Red**
	Black-tailed Godwit (*Limosa limosa*) [A156]	**Amber**
	Bar-tailed Godwit (*Limosa lapponica*) [A157]	**Amber**
	Curlew (*Numenius arquata*) [A160]	**Red**
	Redshank (*Tringa totanus*) [A162]	**Red**
	Turnstone (*Arenaria interpres*) [A169]	**Green**
	Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	**Red**
	Wetland and Waterbirds [A999]	**N/A**

***Table 6**. Site specific conservation objectives for Natura 2000 sites*

South Dublin Bay SAC (000210)		
Attribute	**Measure**	**Target**
Mudflats and sandflats not covered by water at low tide [1140] (Maintain the favourable conservation condition)		
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, 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 distribution	Hectares	Conserve the following community types in a natural condition: Fine sands with *Angulus tenuis* community complex

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
Mudflats and sandflats not covered by water at low tide [1140] (Maintain the favourable conservation condition)		
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes
Community extent	Hectares	Maintain the extent of the *Mytilus edulis*-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 sand to sandy mud with *Pygospio elegans* and *Crangon crangon* community complex; Fine sand with *Spio martinensis* community complex
Annual vegetation of drift lines [1210] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area 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 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 subcommunities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sea rocket (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and oraches (*Atriplex* spp.)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover
Salicornia and other annuals colonizing mud and sand [1310] (Restore the favourable conservation condition of Salicornia and other annuals colonizing mud and sand)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island 29.10 ha.
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 sediment 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

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
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 vegetation with sward
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species – *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.
Atlantic salt meadows [1330] (Maintain the favourable conservation condition)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island 81.84ha.
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 vegetation with sward
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
Vegetation structure: negative indicator species – *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.
Mediterranean salt meadows [1410] (Maintain the favourable conservation condition)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island – 7.98ha.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, 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 range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural vegetation with sward
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)
Vegetation structure: negative indicator species – *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%.
Embryonic shifting dunes [2110] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island – 2.64ha; South Bull – 3.43ha.
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 any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
Vegetation composition: plant health of foredune grasses	Percentage Cover	More than 95% of sand couch (*Elytrigia juncea*) and/or lyme grass (*Leymus arenarius*) should be healthy (i.e., green plant parts above ground and flowering heads present)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities with typical species: sand couch (*Elytrigia juncea*) and/or lyme grass (*Leymus arenarius*)
Vegetation structure: negative indicator species	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull Island – 2.20ha; South Bull – 0.97ha.
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 any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: plant health of dune grasses	Percentage Cover	95% of marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*) should be healthy (i.e. green plant parts above ground and flowering heads present)
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain the presence of species-poor communities dominated by marram grass (*Ammophila arenaria*) and/or lyme-grass (*Leymus arenarius*)
Vegetation structure: negative indicator species	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: North Bull – 40.29ha; South Bull – 64.56ha.
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 any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain 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

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et. al. (2013)
Vegetation composition: negative indicator species (including *Hippophae rhamnoides*)	Percentage Cover	Negative indicator species (including non-native species) to represent less than 5% cover
Vegetation composition: scrub/trees	Percentage Cover	No more than 5% cover or under control
Humid dune slacks [2190] (Restore the favourable conservation condition)		
Habitat area	Hectares	Area increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: North Bull – 3.96ha; South Bull – 9.15ha.
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 any physical obstructions
Physical structure: hydrological and flooding regime	Water table levels; groundwater fluctuations (metres)	Maintain natural hydrological regime
Vegetation structure: zonation	Occurrence	Maintain 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-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in Delaney et. al. (2013)
Vegetation 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-native species) to represent less than 5% cover
Vegetation composition: scrub/trees	Percentage Cover	No more than 5% cover or under control
Petalwort (*Petalophyllum ralfsii)* [1395] (Maintain the favourable conservation condition)		

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
Distribution of populations	Number and geographical spread of populations	No decline
Population size	Number of individuals	No decline
Age of suitable habitat	Hectares	No decline
Hydrological conditions: soil moisture	Occurrence	Maintain hydrological conditions so that substrate is kept moist and damp throughout the year, but not subject to prolonged inundation by flooding in winter
Vegetation structure: height and cover	Centimetres and percentage	Maintain open, low vegetation with a high percentage of bryophytes (small acrocarps and liverwort turf) and bare ground

South Dublin Bay and River Tolka Estuary SPA (004024)		
Attribute	Measure	Target
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Oystercatcher (*Haematopus ostralegus*) [A130], Ringed Plover (*Charadrius hiaticula*) [A137], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Dunlin (*Calidris alpina alpina*) [A149], Bar-tailed Godwit (*Limosa lapponica*) [A157], Redshank (*Tringa totanus*) [A162], Black-headed Gull (*Chroicocephalus ridibundus*) [A179] (Maintain the favourable conservation condition) Note: Grey Plover (*Pluvialis squatarola*) [A141] is proposed for removal from the list of SCI's for the site so no site specific conservation objective is included for the species		
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 and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation
Roseate Tern *Sterna dougallii* [A192]		
Passage population: individuals	Passage population: individuals	Passage population: individuals
Distribution: roosting areas	Distribution: roosting areas	Distribution: roosting areas
Prey biomass available	Prey biomass available	Prey biomass available
Barriers to connectivity	Barriers to connectivity	Barriers to connectivity
Disturbance at roosting site	Disturbance at roosting site	Disturbance at roosting site
Common Tern *Sterna hirundo* [A193]		
Breeding population abundance: apparently occupied nests (AONs)	Breeding population abundance: apparently occupied nests (AONs)	Breeding population abundance: apparently occupied nests (AONs)
Productivity rate: fledged young per breeding pair	Productivity rate: fledged young per breeding pair	Productivity rate: fledged young per breeding pair
Passage population: individuals	Passage population: individuals	Passage population: individuals
Distribution: breeding colonies	Distribution: breeding colonies	Distribution: breeding colonies

South Dublin Bay and River Tolka Estuary SPA (004024)		
Attribute	Measure	Target
Distribution: roosting areas	Number; location; area (hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of common tern among the post-breeding aggregation of terns
Arctic Tern *Sterna paradisaea* [A194]		
Passage population: individuals	Number	No significant decline
Distribution: roosting areas	Number; location; area (hectares)	No significant decline
Prey biomass available	Kilogrammes	No significant decline
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of Arctic tern among the post-breeding aggregation of terns
A999 Wetlands - To maintain the favourable conservation condition of the wetland habitat		
Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192ha, other than that occurring from natural patterns of variation

North Bull Island SPA (004006)		
Attribute	Measure	Target
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Shelduck (*Tadorna tadorna*) [A048], Teal (*Anas crecca*) [A052], Pintail (*Anas acuta*) [A054], Shoveler (*Anas clypeata*) [A056], Oystercatcher (*Haematopus ostralegus*) [A130], Golden Plover (*Pluvialis apricaria*) [A140], Grey Plover (*Pluvialis squatarola*) [A141], Knot (*Calidris canutus*) [A143], Sanderling (*Calidris alba*) [A144], Dunlin (*Calidris alpina alpina*) [A149], Black-tailed Godwit (*Limosa limosa*) [A156], Bar-tailed Godwit (*Limosa lapponica*) [A157], Curlew (*Numenius arquata*) [A160], Redshank (*Tringa totanus*) [A162], Turnstone (*Arenaria interpres*) [A169], Black-headed Gull (*Chroicocephalus ridibundus*) [A179] (Maintain the favourable conservation condition)		
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 and intensity of use of areas by all of the above named species, other than that occurring from natural patterns of variation
A999 Wetlands - To maintain the favourable conservation condition of the wetland habitat		
Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713ha, other than that occurring from natural patterns of variation

Analysis of the Potential Impacts on Natura 2000 Sites.

The Land Development Agency intend to apply to An Bord Pleanála (the Board) for a 10 year permission for a Strategic Housing Development with a total application site area of c.9.6 ha, on lands at the Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14.

The development will consist of the demolition of existing structures (3,736 sq m), including:

- Single storey Former swimming pool / sports hall and admissions unit (2,750 sq m);
- Two storey redbrick building (305 sq m);
- Temporary structures including single storey portacabins (677 sq m);
- Removal of security fence at Dundrum Road entrance;
- Demolition of element of Gatelodge (4 sq m).

The development will also consist of alterations and partial demolition of the perimeter wall, including:

- Removal of section of perimeter wall adjacent to Rosemount Green (south);
- Formation of a new opening in perimeter wall at Annaville Grove to provide a pedestrian and cyclist access and associated gate;
- Removal of section of perimeter wall at the existing Dundrum Road access;
- Alterations and removal of sections of wall adjacent to Dundrum Road, including the provision of a new vehicular, cyclist and pedestrian access;
- Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access; and
- Removal of walls adjacent to Main Hospital Building.

The development with a total gross floor area of c. 106,770 sq m (c. 106,692 sq m excluding retained existing buildings), will consist of 977 no. residential units comprising:

- 940 no. apartments (consisting of 53 no. studio units; 423 no. one bedroom units; 37 no. two bedroom (3 person) units; 317 no. two bedroom (4 person) units; and 110 no. 3 bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 6 storeys (excluding plant) in height, together with private (balconies and private terraces) and communal amenity open space provision (including courtyards and roof gardens) and ancillary residential facilities;
- 17 no. duplex apartments (consisting of 3 no. 2 bedroom units and 14 no. 3 bedrooms units located at Block 02, 08 and 09), together with private balconies and terraces.
- 20 no. two and three storey houses (consisting of 7 no. three bedroom units and 13 no. 4 bedrooms units) and private rear gardens located at Block 02, 08 and 09).

The development will also consist of 3,889 sq m of non-residential uses, comprising:

- Change of use and renovation of existing single storey Gate Lodge building to provide a café unit (78 sq m);
- 1 no restaurant unit (307 sq m) located at ground floor level at Block 03;
- 6 no. retail units (1,112 sq m) located at ground floor level at Blocks 03, 06 and 07;
- 1 no. medical unit (245 sq m) located at ground floor level at Block 02;
- A new childcare facility (463 sq m) and associated outdoor play area located at ground floor level at Block 10; and
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,684 sq m) located at ground and first floor level at Block 06.

The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, pathways and boundary treatments, wetland feature, part-basement, car parking (547 no. spaces in total, including car sharing and accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections; plant (including external plant for district heating and pumping station); waste management provision; SuDS measures; sustainability measures (including green roofs and solar panels); signage; public lighting; any making good works to perimeter wall and all site development and excavation works above and below ground.

Construction and Operational Impacts

The proposed development is not within a designated conservation site. The proposed development site is located in close proximity to South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA (2.8 km). A direct pathway to South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA, exists via surface water to Dublin.

The potential impacts on Natura 2000 sites are seen in Table 7. The construction of the proposed development would potentially impact on the existing ecology of the site and the surrounding area. These potential construction impacts would include impacts that may arise during the site clearance, reprofiling, excavations of the site, and the building phases of the proposed development. This could lead to the transportation of silt and pollutants via the proposed direction of surface water to the River Slang and a drainage ditch that leads to the Elm Park Stream, which also enters Dublin Bay. This direct hydrological connection has the potential to impact upon the Qualifying Interests of South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA.

Ecology

The impact of the development during construction phase will be a loss of existing habitats and species. During the site visit no flora or terrestrial mammal species of conservation importance were recorded on site or in NPWS or NBDC records. Bats were noted on site. See supporting information in the EIAR for additional information on the species and habitats found on site.

As outlined in the Wintering Bird Survey Report Appendix I[15] the "*proposed development site is not within a SPA, however, given the proximity of several SPAs, there may be potential for impacts to result during construction and operational phases of the proposed development on birds that are associated with these SPAs. Potential impacts could include:*

- *Loss of potential foraging/roosting habitat within the proposed development site.*
- *Disturbance/displacement during construction works and the operational phase, including through movement of machinery, personnel, noise, vibration and/or noise associated with domestic dwellings.*
- *Water pollution of downstream SPAs.*

The maximum likely distance at which disturbance will impact SCIs from a SPA is 300m (Cutts et al., 2013) from the proposed development boundary. Given the separation distance from the SPAs, disturbance impacts within SPAs are not anticipated. However, given the level of activity of black-headed gull at the development site, disturbance/displacement and habitat loss impacts during the construction phase cannot be ruled out. The peak number of black-headed gull observed foraging within the proposed development were not of county importance for this species, therefore it is unlikely that disturbance to this species will be ecologically significant. It is unlikely that there will be any significant disturbance/displacement of curlew in the proposed development site, given the lack of evidence that the site is used with any regularity. Brent geese were not observed foraging or roosting within the proposed development (Table 3-3) nor was there any evidence of geese on the proposed development (Table 3-4). Therefore significant disturbance/displacement of brent geese are not anticipated at the proposed development site.

When built, the proposed housing scheme may result in disturbance of SCIs of the SPAs within the likely ZOI of the proposed development site. However, habituation will likely occur to this new source of disturbance given that the SCIs of the SPA are already accustomed to the disturbance associated with Dundrum town and existing surrounding housing developments. A wide range of environmental factors are required to support water bird species including good water quality and clarity and a good supply of food resources. Thus, water quality impacts resulting from the proposed development (i.e. during the construction and operational phases) could result in a reduction in the availability of suitable habitat for water bird species at downstream wetland sites. The effect of such a reduction in water quality has the potential to be ecologically significant. However, it is likely that best practice design and mitigation can be implemented that would avoid or reduce such impacts."

Construction phase mitigation measures are required on site particularly as reprofiling of the site is proposed which can lead to silt laden and contaminated runoff. There is also potential for silt laden runoff and contamination to enter the drainage ditch with potential for downstream impacts. Compliance with the Water Pollution Acts and Inland Fisheries guidance[16] documentation would be seen as the primary method of ensuring no significant impact on designated conservation sites. Mitigation measures are required to ensure compliance with the Water Pollution Acts and Inland Fisheries Ireland guidance.

[15] Full Winter Bird Survey Report 2020/2021 report including Appendices accompanies the EIAR.

[16] https://www.fisheriesireland.ie/documents/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters/file.html

Table 7. Potential for adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites		
Natura 2000 Site & Site Code	Qualifying Interests	Potential for Adverse Effects
South Dublin Bay SAC	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the onsite drainage ditch with potential for downstream impacts on South Dublin Bay SAC. The habitats of conservation interest of this SAC are not on site. However, the range of the habitats and species that are of conservational interest would potentially be downstream of the proposed works. On site works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and petrochemicals. The storage of topsoil or works in the vicinity of the drainage ditch on site could lead to dust, soil or silt laden runoff entering adjacent watercourses and drainage ditches. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite drainage ditch with downstream impacts on the SAC. If on-site concrete production is required or cement works are carried out in the vicinity of watercourses/drainage ditches there is potential for contamination of watercourses. The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels and chemicals could lead to pollution on site or in adjacent watercourses. Impacts on the SAC from upstream sources have the potential to directly impact on the qualifying interests of the SAC in the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests: • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Embryonic shifting dunes [2110] Mitigation measures are required to remove the potential of impacts on the SAC from direct pathways via the drainage ditch on site.
North Dublin Bay SAC	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310]	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the onsite drainage ditch and watercourse with potential for downstream impacts on North Dublin Bay SAC. The habitats of conservation interest of this SAC are not on site. However, the range of the habitats and species that are conservation interests would potentially be within Dublin Bay. Out of an abundance of caution as mitigation measures are required on site this may lead to a reduction of impacts on this SAC if quantities of pollution are significant. However, given the mixing and dilution within Dublin Bay impacts would not be expected to be significant. However, on site works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and petrochemicals into Dublin Bay. The storage of topsoil or works in the vicinity of the drainage ditch on site could lead to dust,

	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalwort (*Petalophyllum ralfsii*) [1395]	soil or silt laden runoff entering adjacent watercourses and drainage ditches. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite ditch and watercourse with downstream impacts on the SAC. If on-site concrete production is required or cement works are carried out in the vicinity of watercourses/drainage ditches there is potential for contamination of watercourses. The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels and chemicals could lead to pollution on site or in adjacent watercourses. Impacts on the SAC from sources on site have the potential to directly impact on the qualifying interests of the SAC in the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests: • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] • Mediterranean salt meadows (*Juncetalia maritimi*) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] • Petalwort (*Petalophyllum ralfsii*) [1395] Mitigation measures are required to remove the potential of impacts on the SPA from direct pathways via the drainage ditch on site.
South Dublin Bay and River Tolka Estuary SPA	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143]	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the onsite drainage ditch with potential for downstream impacts on South Dublin Bay and River Tolka Estuary SPA. However, the range of the species that are of conservational interest may extend into the proposed development site or would potentially be downstream of the proposed works. Instream works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and petrochemicals. The storage of topsoil or works in the vicinity of the drainage ditch on site could lead to dust, soil or silt laden runoff entering adjacent watercourses and drainage ditches. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite drainage ditch with downstream impacts on the SPA. If on-site concrete production is required or cement works are carried out in the vicinity of watercourses/drainage ditches there is potential for contamination of watercourses. The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels and chemicals could lead to pollution on site or in adjacent watercourses.

	Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]	Impacts on the SPA from upstream sources have the potential to directly impact on the qualifying interests of the SPA in the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests: • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] • Oystercatcher (*Haematopus ostralegus*) [A130] • Ringed Plover (*Charadrius hiaticula*) [A137] • Grey Plover (*Pluvialis squatarola*) [A141] • Knot (*Calidris canutus*) [A143] • Sanderling (*Calidris alba*) [A144] • Dunlin (*Calidris alpina*) [A149] • Bar-tailed Godwit (*Limosa lapponica*) [A157] • Redshank (*Tringa totanus*) [A162] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Roseate Tern (*Sterna dougallii*) [A192] • Common Tern (*Sterna hirundo*) [A193] • Arctic Tern (*Sterna paradisaea*) [A194] In particular, the introduction of fresh water into South Dublin Bay and River Tolka Estuary SPA via the proposed surface water drainage network may have significant effects on the conservation objectives of Light-bellied Brent Geese (*Branta bernicla hrota*) [A046]. The introduction of fresh water may impact on the growth of *Zostera* in the SPA, a critical food source for this bird species. Bird numbers that are qualifying interests of this Natura 2000 site that were observed on site were below the 1% level of the National population indicating that the site is not an important foraging site for these species. Further, out of an abundance of caution, it is considered that there is the remote potential for disturbance/displacement of the Qualifying Interests of this SPA during construction works and the operational phase, including through movement of machinery, personnel, noise, vibration and/or noise associated with construction. Mitigation measures are required for the potential of impacts on the SPA.
North Bull Island SPA	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054]	Given the nature of the works, all of these effects would be expected to be localised in nature restricted to the immediate vicinity of the site. However, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the onsite drainage ditch and watercourse with potential for downstream impacts on North Bull Island SPA. However, the range of the species that are conservation interests may extend into the proposed development site or would potentially be downstream of the proposed works. Instream works have the potential for downstream impacts on aquatic biodiversity through the introduction of silt and petrochemicals. The storage of topsoil or works in the vicinity of the drainage ditch on site could lead to dust, soil or silt laden

	Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]	runoff entering adjacent watercourses and drainage ditches. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite ditch and watercourse with downstream impacts on the SPA. If on-site concrete production is required or cement works are carried out in the vicinity of watercourses/drainage ditches there is potential for contamination of watercourses. The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels and chemicals could lead to pollution on site or in adjacent watercourses. Impacts on the SPA from upstream sources have the potential to directly impact on the qualifying interests of the SPA in the absence of mitigation measures. In the absence of mitigation measures there is the potential to impact on the distribution number and range of the following qualifying interests: • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] • Shelduck (*Tadorna tadorna*) [A048] • Teal (*Anas crecca*) [A052] • Pintail (*Anas acuta*) [A054] • Shoveler (*Anas clypeata*) [A056] • Oystercatcher (*Haematopus ostralegus*) [A130] • Golden Plover (*Pluvialis apricaria*) [A140] • Grey Plover (*Pluvialis squatarola*) [A141] • Knot (*Calidris canutus*) [A143] • Sanderling (*Calidris alba*) [A144] • Dunlin (*Calidris alpina*) [A149] Bird numbers that are qualifying interests of this Natura 2000 site that were observed on site were below the 1% level of the National population indicating that the site is not an important foraging site for these species. Further, out of an abundance of caution, it is considered that there is the remote potential for disturbance/displacement of the Qualifying Interests of this SPA during construction works and the operational phase, including through movement of machinery, personnel, noise, vibration and/or noise associated with construction. Mitigation measures are required for the potential of impacts on the SPA.

***Table 8**. Mitigation measures*

Sensitive Receptors	Potential Impacts on SPA & SAC	Mitigation Measures to Prevent Impacts on Natura 2000 sites
South Dublin Bay SAC North Dublin Bay SAC South Dublin Bay and River Tolka Estuary SPA North Bull Island SPA Elm Park Stream River Slang	• Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream impacts • Negative impacts on the aquatic environment, aquatic species and qualifying interests.	**Construction Phase** Mitigation measures as outlined in the CEMP include: ***'9.2 STORAGE OF HAZARDOUSMATERIALS*** *To minimise environmental risks the following requirements shall be adhered to:* • *Hazardous liquid materials or materials shall be stored in the site compound in a bunded area (for liquids). All oils, fuels and other hazardous liquid materials will be clearly labelled and stored in an upright position. The capacity of the bunded area shall conform with EPA Guidelines e.g. hold 110% of the contents or 110% of the largest container whichever is* • *greater.* • *Fuel may also be stored in fuel bowsers located in the proposed compound location. Fuel bowsers shall have certificates of conformity or shall be integrity tested.* • *Smaller quantities of fuel may be carried/stored in clearly labelled metal jerry cans. These cans shall be in good condition, have secure lockable lids and be stored in an appropriate manner i.e. over drip trays. Contents of drip trays to be suitably disposed by a licensed waste disposal contractor.* • *Inductions and regular toolbox talk to be carried out for all operatives in relation to the material storage arrangements and actions to be taken in the event of an accidental spillage.* ***9.3 PLANT & EQUIPMENT*** *To minimise environmental risks the following requirements shall be adhered to* • *Plant and equipment to be used during works, will be in good working order & regularly maintained with no evidence of leaks or damaged exhausts. Equipment will be parked in areas remote from any environmentally sensitive locations at the end of each day i.e. the open channel drainage ditch crossing the site.* • *Exhaust silencers to be fitted to plant and machinery that is likely to cause a noise nuisance. Construction plant used on site will comply with the relevant Irish regulations in relation to noise and vibration requirements.* • *The contractor will have a re-fuelling protocol in place. Re-fuelling to be carried out inside the site compound area in a designated area.* • *Toolbox talks are also to be held with all operatives to highlight environment risk areas or works. Environmental control measures are also to be highlighted.* ***9.4 NOISE*** *Some impact of noise is likely to occur as a result of the construction activity. Construction work is of a temporary nature and the resulting noise levels are usually acceptable, subject to typical management and time control procedures which are common to most urban based development projects.*

		Attention should be paid to the recommendations given in BS 5228. 'Noise Control on construction & Open Sites' & BS 6187 Code of Practice for Demolition (latest editions). *The noise limits to be applied for the duration of the infrastructure works are those specified below.* • *Daytime (07:00 to 19:00 hrs) – 55dB Laeq, 15 m ins.* • *Evening (19:00 to 23.00 hrs) – 50dB Laeq, 15 mins* • *Night-time (23:00 to 07:00 hrs) – 45Db Laeq, 15 mins* *Refer to Section 10 of this report for the proposed noise monitoring regime.* *The following shall be implemented to mitigate & control construction noise impacts in order to avoid unacceptable impact on sensitive receptors in particular local residents:* • *Noise Management Procedures: Prior to the start, strictly enforced noise management procedures shall be put in place by the contractor and communicated to staff via an induction and follow-on toolbox talks.* • *Noisy operation shall be avoided where possible or replaced with a lower noise alternative if possible.* • *Noise shall be controlled at source in accordance with BS 5228 (latest edition). Measures used should include the use of exhaust silencers on vehicles and machinery that have the potential to cause a nuisance, the use of rubber wheeled/tracked vehicles where possible, the use of low noise generators and other machinery with manufacturer approved acoustics covers or linings. Electrically powered equipment to be used in preference to diesel/petrol powered equipment. Pneumatic percussive tools will be fitted with manufacturer approved mufflers or silencers. All excavator mounted pneumatic breakers used for demolition and concrete/rock breaking activities shall be fitted with effective dampeners. Where breaking out work is likely to be prolonged, the work area should be enclosed within a noise absorbing blanket structure to ensure noise emissions are within the defined limits. Such enclosures should also be considered for other static noise generating operations or machinery as necessary.* • *Idling and rev'ving of machinery & vehicles is to be avoided. Vehicles and machinery not in use should be shut down.* • *Noisy operations should be staggered to ensure that any receptor is not exposed to unacceptably high levels of noise over extended periods.* • *Dragging of materials such as steel covers, plant or excavated materials along ground surfaces shall not be permitted.* • *Plant Reversing Alarms: Where reasonably practicable and deemed safe by risk assessment, tonal reversing alarms on construction vehicles shall be replaced with broadband alarms.* • *As per Section 8.11 of this report, a Liaison Manager appointed from the contractor's senior staff on site, shall deal with complaints and liaise with the local community, the Local Authority and other stakeholders as necessary in relation to noise issues. All complaints are to be recorded and responded to. Appropriate actions to be taken to avoid similar future causes for complaint.* ***9.5 DUST*** *The Contractor's proposals will include dust control measures in accordance with best practice and with reference to the following:* • *Air Pollution Act 1987* • *BS 6187: Code of Practice for Demolition*

		A dust minimisation plan will be formulated for the construction phase of the project. The Contactor will put in place a regime for monitoring dust deposition rates in the vicinity of the site during the works using the Bergerhoff Method. The amount of dust deposited anywhere outside the proposed development, when averaged over a 30-day period, will not exceed the values below: • *130mg/m2 per day when measured according to the BS method which takes account of insoluble components only or,* • *350mg/m2 per day when measured according to TA Luft, which includes both so soluble and insoluble matter. (EPA compliance monitoring is based on the TA Luft method).* *Refer to Section 10 of this report for the proposed dust monitoring regime. Dust mitigation & control measures will include the items listed below. Dust generating activities will cease if limits are exceeded until appropriate mitigation measures are put in place by the contractor.* • *Spraying: During dry periods, dust emissions from heavily trafficked locations (on and off site) will be controlled by spraying surfaces with water. Stockpiles of excavated material, demolition rubble, sand etc shall be covered with tarpaulins or if this is impracticable should be sprayed with water from a bowser.* • *A road sweeper is to be used to keep hard surfaced roads inside the site and in it's vicinity, clean.* • *Use of rubble chutes and receptor skips during construction activities.* • *Construction vehicle speeds are to be restricted to less than 15 kph to avoid raising dust. The overloading of tipper trucks exiting the site shall not be permitted and such trucks shall be covered. Skips containing dust generating material should also be covered.* • *Vehicles & construction plant/equipment are to be regularly serviced to ensure that exhaust emissions are within permissible limits. Idling of vehicles to be avoided.* • *For concrete cutting or stone cutting operations, dust emissions controls are to be in place.* • *Dust netting on scaffolds and along boundaries shall be installed as necessary to avoid escaping dust emissions from the site falling on third party lands and existing residential areas.* • *As per Section 8.11 of this report, a Liaison Manager appointed from the contractor's senior staff on site shall deal with complaints and liaise with the local community, the Local Authority and other stakeholders as necessary in relation to dust issues, out-of-hours work etc. All complaints are to be recorded and responded to. Appropriate actions to be taken to avoid similar future causes for complaint.'* ***'9.9 POLLUTION CONTROL*** *Prior to the commencement of construction, the appointed contractor will be required to obtain formal agreement from the Local Authority on pollution prevention measures as well the overall approach and emergency procedures for all construction stages.* *Contractors will have regard to the following best practice guidelines to ensure that water bodies are adequately protected from construction work:* • *Construction Industry Research and Information Association (CIRIA) C649: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006)* • *CIRIA C649: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006)* *9.9.1 General*

		• *Demolition and Construction methods used will be tailored to reduce, as much as possible, dust and noise pollution.* • *Mitigation & control measures in relation to hazardous material spillages, plant & equipment emissions, noise, dust, vibration, disturbance to trees & wildlife set out in preceding sections of this report and in the EIAR document, shall be adhered to for the duration of the construction works.* • *The location and size of stockpile areas for sands and gravel will be specified and identified on the maps.* • *Sediment runoff will be minimised by standard engineering measures including sediment skirts around soil stockpiles, sediment retention barriers in surface water drains and the use of adequate construction roads.* *9.9.2 Surface Water Drainage & Ground Water Control* *A method statement will be prepared by the contractor and agreed with Dún Laoghaire-Rathdown County Council prior to commencement of the works, detailing the measures to be taken to ensure that no water run-off from the site occurs during the construction period This method statement must comply with this CEMP document. Any run-off will be intercepted on site, where the ground falls towards adjoining properties or public roads/footpaths. This will be achieved with open drains or French drains and collected for treatment based on the conditions of a DLRCC and/or Irish Water licence, prior to pumping to the surface sewer network. There is a drainage ditch running through the site. Direct uncontrolled run-off into this will not be allowed.* *Run-off control measures to include the following:* • *Dewatering measures should only be employed where necessary.* • *For groundwater encountered during construction phase, mitigation measures will include;* – *Dewatering by pumping to an appropriate treatment facility or settlement tanks in order to allow sediment to settle from solution prior to discharge.* – *Excluding contaminating materials such as fuels and hydrocarbons from sensitive parts of the site i.e. highly vulnerable groundwater areas.* • *If concrete mixing is carried out on site, the mixing plant will be situated in a designated area with an impervious surface.* • *Existing surface drainage channels within the site that serve adjacent lands are to be retained where possible to prevent causing increased flooding impacts.* • *All surface water sewer connections will be made under the supervision of the Local Authority/Irish Water and checked prior to commissioning.* • *All onsite surface water drains will be tested and surveyed prior to connection to the public sewer to prevent any possibility of ingress of ground water.* • *All surface water manholes and drains will be inspected and where necessary sealed to ensure that uncontrolled ground water inflow does not occur.* • *Filters and silt traps will be used to prevent rain washing silts and other materials into the surface water network and creating blockages.* • *Areas surrounding the site will be protected from sedimentation and erosion due to direct surface water runoff generated onsite during the demolition and construction phase. To prevent this from occurring, surface water discharge from the site will be managed and controlled for the duration of the construction works, as noted in the points above, until the permanently attenuated surface water drainage system of the proposed site is complete.* • *Regular inspections of settlement tanks are to be carried out and additional treatment used if settlement is not adequate.*

		• *Bunded areas will be created for the storage or use of any fuels, oils, greases, cement, etc.* • *Emergency spill kits will be kept close to works.* *9.9.3 Soil* • *If un-contaminated, any existing topsoil will be retained on site if possible to be used for the proposed development. Topsoil will be stored in an appropriate manner on site for the duration of the construction works and protected for re-use on completion of the main site works.* • *During the demolition and construction phase, all excavations and exposed sub-soils in open cuts will be blinded and protected with clean broken stone as soon as possible after exposing the subsoil in order to prevent erosion.* ***9.10 REINSTATEMENT / ROAD CLEANING*** *9.10.1 Construction Stage* *Prior to the works commencing, detailed photograph surveys (condition schedules) of adjoining walls, roads, footpaths, grass verges etc. is to be prepared. Copies of the relevant parts are to be made available to adjoining owners and Dún Laoghaire-Rathdown County Council. This record will form the basis of assessing repairs to adjoining areas in the future should a dispute arise as to their cause. Roadways are to be kept clean of muck and other debris. A road sweeping truck is to be provided if necessary to ensure that this is so.* *9.10.2 On Completion* *Reinstatement at completion of the works will involve:* • *The cleaning of the existing sewers in the vicinity of the development as required.* • *Testing and cleaning of all watermains in the development to the requirements of the Local Authority prior to connection to the public watermain. This will reduce the risk of contamination to the public water supply when the new network is connected to the system.* • *Repair of any damage to any adjacent public roadways, kerbs, grass verges etc. in accordance with Dún Laoghaire-Rathdown County Council requirements.* • *Reinstatement of all excavations to the requirements of Dún Laoghaire-Rathdown County Council* • *Leaving the area in a neat and clean condition, removing all deleterious materials that may have been deposited during construction works.'* **Operation Phase** • Compliance with Water Pollution Acts will be carried out in relation to drainage on site. • A post construction inspection of drainage connections to the onsite drain will be carried out by the project ecologist to ensure that the petrochemical interceptor is in place and working

Adverse Effects on the conservation objectives of Natura 2000 sites likely to occur from the project (post mitigation)

A robust series of mitigation measures are proposed. These would ensure that water entering the River Slang and the existing open channel drain leading to the Elm Park Stream is clean and uncontaminated. In addition, all instream works will be only carried out with an approved methodology (IFI and project ecologist). Onsite works will be supervised by a project ecologist. Further, the mitigation measures outlined above will ensure that there will be no significant noise impacts on the proximate Natura 2000 sites or their features of interest. However, given the proximity of the drainage ditch to the works which directly leads to the Natura 2000 sites, it should be noted that the early implementation of ecological supervision on site will be at the initial mobilisation and enabling works. This is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation strategies.

With the successful implementation of the mitigation measures to limit surface water impacts on both the River Slang and the existing open channel ditch which leads to the Elm Park Stream, including mitigation/supervision, no significant impacts are foreseen from the construction or operation of the proposed project. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works and would not impact on the Natura 2000 sites.

Further, following the mitigation measures outlined above, no significant noise impacts on the Qualifying Interests of proximate Natura 2000 sites are predicted.

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, and North Bull Island SPA, through the application of the standard construction and operational phase controls as outlined above. In particular, the mitigation measures to ensure compliance with Water Pollution Acts, Inland Fisheries Ireland guidance and to prevent silt and pollution entering the watercourse will satisfactorily address the potential impacts on downstream biodiversity and the Natura 2000 sites. No significant adverse impacts on the conservation objectives of Natura 2000 sites are likely following the implementation of the mitigation measures outlined above.

It is essential that these measures outlined are complied with, to ensure that the proposed development does not have any significant noise impacts or any “downstream” environmental impacts. These measures are to protect the protected bird species and groundwater/surface water, which are potentially the primary vectors of impacts from the site, and to ensure that it is not impacted during construction and /or operational phases of the proposed development.

In-combination Effects

There are several proposed developments located in the area immediately surrounding the subject site. The following is a list of planning applications in close proximity to the subject site as identified on the Department of Housing, Local Government and Heritage’s ‘National Planning Application Database’ portal[17],:

Table 9. In combination effects evaluated.

DLRCC/ ABP Reg. Ref.	Address	Decision Date	Overview of Development
D16A/0818	Site of approximately 1.23 hectares at Greenacres, Kilmacud Road Upper, Dublin 14	11th Sept 2017	- Demolition c. 425 sq m - 120 no. apartments - 120 car parking spaces - 144 bicycle spaces
ABP31013821	Mount Saint Mary's and Saint Joseph's, Dundrum	25th Aug 2021	- SHD - Demolition 2,913.8 sq m

[17] https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de

DLRCC/ ABP Reg. Ref.	Address	Decision Date	Overview of Development
	Road, Dundrum, Dublin 14		- 231 no. residential units - After school childcare facility 161 sq m - Café 83 sq m - 118 no, car parking spaces - 462 no. cycle spaces - 4 no. motorcycle spaces
D19A/0162	Former Shell Garage, Roebuck Road, Clonskeagh, Dublin 14	8th August 2019	- Demolition - 43 no. residential units - 47 no. car parking spaces - 92 no. cycle parking spaces
ABP30835320	The car sales premises currently known as Vector Motors (formerly known as Victor Motors), Goatstown Road, Dublin 14, D14FD23	3rd Feb 2021	- SHD (Student accommodation) - 960 sq m demolition - 239 no. bed spaces - 6 no car parking spaces
D20A/0328	University College Dublin, Belfield, Dublin 4	21st Jan 2021	- Extension to the existing car park to provide 239 no. additional car parking spaces, resulting in a total permanent surface car park comprising 300 no. car-parking spaces (61 no. existing spaces plus 239 no. new additional spaces). - The proposed development also seeks a modification of the Athletics Track development permitted under Dun Laoghaire Rathdown County Council Reg. Ref. D19A/0001, to omit 185 no. permitted temporary car parking spaces, resulting in a total of 70 no. temporary car parking spaces being delivered as part of the permitted Athletics track development.
ABP30943021	2.12 ha at Our Lady's Grove, Goatstown Road, Dublin 14	3rd June 2021	- SHD - Student Accommodation - 698 no. bed spaces - 9 no. car parking - 4 no. motorcycle - 860 no. cycle parking
ABP31128721	c.0.9ha at No. 97A Highfield Park (D14P710), and No. 1 Frankfort Castle (D14 HY03), No. 2 Frankfort Castle (D14DE72) and Frankfort Lodge (D14C9P2), Old Frankfort, Dublin 14	20th Dec 2021	- SHD - 115 no. residential units - 80 sq m creche

Proposed Projects (in system)

DLRCC/ ABP Reg. Ref.	Address	Lodgement Date/ Status	Overview of Development
ABP31182621	Lands at Knockrabo, Mount Anville Road,, Goatstown, Dublin 14	Lodged on 1st Nov 2021 as a SHD with ABP. Decision due 28th Feb 2022. (At the time of writing, ABP had confirmed a delay surrounding the determination of this application)	SHD (Amendment to permitted Phase 2) 227 no. units (134 no. additional units from permitted SHD) 178 no. car parking spaces 519 no. bicycle spaces
TC06D.309697	Sommerville House, Dundrum Road, Dublin 14.	Lodged as a SHD Pre-Application Consultation Request with ABP. ABP feedback provided on 24th May 2021.	SHD (Consultation) 111 No. units
TC06D.311553	Old Dundrum Shopping Centre and Other Properties, Main Street, Dundrum, Dublin 14	Lodged as a SHD Pre-Application Consultation Request with ABP. ABP feedback provided on 14th Jan 2022.	SHD (Consultation) 884 no. apartments Creche
N/A	Lands at Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14	Pre-application engagement commenced with DLRCC. Planning application due to be lodged with DLRCC when the SHD (the proposed project) has been decided.	3,540 sq m demolition 71 no. residential units 5,566 sq m non-residential floorspace 60 no. car parking spaces

No Potential Cumulative Impacts are foreseen. The development will have to incorporate measures to protect water quality in compliance with legislative standards for receiving water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and S.I. 77 of 2019).

Given this, it is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on Natura 2000 sites will be seen as a result of the proposed development in combination with other projects. No in combination effects are foreseen.

No projects in the vicinity of the proposed development would be seen to have a significant in combination effect on Natura 2000 sites.

Conclusion

In a strict application of the precautionary principle, it has been concluded that significant effects on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA are likely from the proposed works in the absence of mitigation measures, primarily as a result of direct hydrological connection to the site via the direction of surface water to the River Slang and an existing open channel ditch/Elm Park Stream into Dublin Bay, with possible downstream impacts from the project during the construction, landscaping and drainage works. Further, there is the potential for heightened noise impacts during construction to impact on the protected bird species of proximate SPAs. For this reason, an NIS was carried out to assess whether the proposed project, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European Site. All other Natura 2000 sites were screened out at initial screening.

Construction on this site will create localised light disturbance that will not impact on Natura 2000 sites. Mitigation measures must be in place to ensure that there are no significant impacts on the surface water that leads to Dublin Bay. Surface water discharge from site will be developed in accordance with: The Greater Dublin Strategic Drainage Study Volume 2; The Greater Dublin Regional Code of Practice for Drainage Works; BS EN – 752:2008, Drains and Sewer Systems Outside Buildings; and, Part H, Building Drainage of the Building Regulation. Mitigation measures must also be in place to ensure that there are no significant noise impacts on the protected bird species of proximate SPAs.

Following the implementation of the mitigation measures outlined, the construction and presence of this development would not be deemed to have a significant impact. No significant impacts are likely on Natura 2000 sites, alone in combination with other plans and projects based on the implementation of mitigation measures.

This report presents an Appropriate Assessment Screening and NIS for the proposed development. It outlines the information required for the competent authority to screen for appropriate assessment and to determine whether or not the proposed development, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

On the basis of the content of this report, the competent authority is enabled to conduct an Appropriate Assessment and consider whether, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

No significant effects are likely on Natura 2000 sites, their features of interest or conservation objectives. The proposed project will not will adversely affect the integrity of European sites.

References

The following references were used in the preparation of this AA screening report.

1. Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities March 2010.
2. Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government 2009; www.npws.ie/publications/archive/NPWS_2009_AA_Guidance.pdf
3. Managing NATURA 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC, European Commission 2000; ec.europa.eu/environment/nature/Natura2000/management/docs/art6/provision_of_art6_en.pdf
4. 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; ec.europa.eu/environment/nature/Natura2000management/docs/art6/Natura_2000_assess_en.pdf
5. Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; ec.europa.eu/environment/nature/Natura2000/management/docs/art6/guidance_art6_4_en.pdf
6. Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging; ec.europa.eu/environment/nature/Natura2000/management/docs/guidance_doc.pdf
7. The Status of EU Protected Habitats and Species in Ireland. www.npws.ie/publications/euconservationstatus/NPWS_2007_Conservation_Status_Report.pdf
8. NPWS (2013) Conservation Objectives: South Dublin Bay SAC 000210. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
9. NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
10. NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
11. NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
12. NPWS (2016) Conservation Objectives: Howth Head SAC 000202. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
13. NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
14. NPWS (2021) Conservation Objectives: Glenasmole Valley SAC 001209. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage .
15. NPWS (2021) Conservation Objectives: Knocksink Wood SAC 000725. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage .
16. NPWS (2019) Conservation Objectives: Ballyman Glen SAC 000713. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
17. NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
18. NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
19. NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
20. NPWS (2022) Conservation objectives for Dalkey Islands SPA [004172]. Generic Version 9.0. Department of Housing, Local Government and Heritage.
21. NPWS (2022) Conservation objectives for Howth Head Coast SPA [004113]. Generic Version 9.0. Department of Housing, Local Government and Heritage.

Appendix I Biodiversity

Biodiversity Records

The National Biodiversity Data Centre's online viewer was consulted to determine the extent of biodiversity and / or species of interest in the area. An assessment of the site specific area was carried out and it recorded no species of interest within the site area. Following this, a 2km^2 grid was assessed (O12U). Table AI.I provides a list of all species of interest recorded in the 2km^2 grid area.

Table AI.I. List Of All Species of Interest Recorded in the 2km^2 Grid Area

Barn Swallow (*Hirundo rustica*)	Common Frog (*Rana temporaria*)
Black-headed Gull (*Larus ridibundus*)	Common Kestrel (*Falco tinnunculus*)
Common Kingfisher (*Alcedo atthis*)	Common Pheasant (*Phasianus colchicus*)
Common Starling (*Sturnus vulgaris*)	Common Swift (*Apus apus*)
Common Wood Pigeon (*Columba palumbus*)	Eurasian Curlew (*Numenius arquata*)
Eurasian Oystercatcher (*Haematopus ostralegus*)	Great Cormorant (*Phalacrocorax carbo*)
Herring Gull (*Larus argentatus*)	House Martin (*Delichon urbicum*)
House Sparrow (*Passer domesticus*)	Lesser Black-backed Gull (*Larus fuscus*)
Mallard (*Anas platyrhynchos*)	Mew Gull (*Larus canus*)
Mute Swan (*Cygnus olor*)	Rock Pigeon (*Columba livia*)
Sand Martin (*Riparia riparia*)	Snowy Owl (*Bubo scandiaca*)
Tufted Duck (*Aythya fuligula*)	Butterfly-bush (*Buddleja davidii*)
Indian Balsam (*Impatiens glandulifera*)	Japanese Knotweed (*Fallopia japonica*)
Donacia semicuprea	*Limnebius nitidus*
Large Red Tailed Bumble Bee (*Bombus (Melanobombus) lapidarius*)	Sand Feather-moss (*Brachythecium mildeanum*)
Brown Rat (*Rattus norvegicus*)	Eastern Grey Squirrel (*Sciurus carolinensis*)
European Otter (*Lutra lutra*)	Eurasian Badger (*Meles meles*)
Lesser Noctule (*Nyctalus leisleri*)	House Mouse (*Mus musculus*)
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)
	West European Hedgehog (*Erinaceus europaeus*)
	Himalayan Honeysuckle (*Leycesteria formosa*)

An assessment of files received from the NPWS (Code No. 2020_185) which contains records of rare and protected species and grid references for sightings of these species. There are recorded sightings of West European Hedgehog (*Erinaceus europaeus*) within a 1km^2 grid that includes a southern portion of the subject site. The Common Frog (*Rana temporaria*) and the Otter (*Lutra lutra*) were noted by NPWS within the area of the subject site. No species of conservation importance were noted by NBDC within or in the vicinity of the site.

Terrestrial Habitats, Flora and Avian Ecology

The proposed development area was surveyed 13th August 2020, 21st August 2020, 23rd February 2021, 10th August 2021, 15th September 2021 and 12th October 2021. Additional surveys were carried out for wintering birds in 2020, 2021 and in 2022. Habitats encountered were classified according to Fossitt (2000) and are seen in Figure A1.1, based on the site visit in August 2021. Distinct habitats were noted and species detailed. It should be noted that the site is maintained to a high standard with full time gardeners on site. There is evidence of herbicide use and regular mowing. As a result, biodiversity is greater in the more neglected areas of the site. However, these areas make up very little of the site. The following habitats were noted:

Figure AI.I. Fossitt Habitat map

Plate 1. GA2- Amenity grassland (improved).

GA2- Amenity grassland (improved).

Much of the open space on site consists of mown amenity grassland. Three large areas are noted on site. The first it to the south of the main treelined entrance, the second borders the southern boundary wall and the third is an area to the east of the main Central Mental Hospital building in the vicinity of some outbuildings. All areas were regularly mown and were poor in species diversity. Species included clovers (*Trifolium spp*.), plantains (*Plantago spp*.), thistles (*Cirsium arvense & C. vulgare*), creeping buttercup (*Ranunculus repens*), ivy (*Hedera helix*), common birds-foot-trefoil (*Lotus corniculatus*), docks (*Rumex spp*.), bramble *(Rubus fruticosus agg*.), daisy (*Bellis perennis*), and nettle (*Urtica dioica*).

Plate 2. WD5-Scattered Trees and Parkland.

Plate 3. WD5-Scattered Trees and Parkland (Orchard).

WD5-Scattered Trees and Parkland.

The grassland extends into significant areas of the site where scattered trees are noted. Similar flora are noted in these areas as was noted in the Amenity Grassland areas. However, tree species included Copper Beech (Fagus sylvatica 'Purpurea'), Norway Maple (Acer platanoides), Atlas Cedar (Cedrus atlantica), Atlas Cedar (*Cedrus atlantica*), Holly cv. (Ilex aquifolium), Sycamore cv. *(Acer pseudoplatanus*), White Flowering Cherry (*Prunus Sp*.), Monkey Puzzle (*Araucaria Araucana*), Douglas Fir (Pseudotsuga menziesii), Deodar Cedar (*Cedrus deodara*), Monterey Pine (*Pinus radiata*). Of note is the orchard on site which is located on the central area of the site proximate to the drainage ditch. Here the grass was less maintained the amenity grassland included white clover (*Trifolium repens*), red clover (*Trifolium pratense*), daisy (*Bellis perennis*), plantains (*Plantago spp*.), thistles (*Cirsium s*p.), creeping buttercup (*Ranunculus repens*), docks (*Rumex spp*.), cat's-ear (*Hypochaeris radicata*), nettle (*Urtica dioica*), dandelion (*Taraxacum spp*.), cow parsley (*Anthriscus sylvestris*), lesser trefoil (*Trifolium dubium*, bramble (*Rubus fruticosus*), hedge bindweed (*Calystegia sepium*), ground-elder (*Aegopodium podagraria*). Herbicide use on site was noted around trees and along paths.

GS2- Dry meadows and Grassy Verges

Dry meadows and grassy verges were noted in areas where the grass was left unmown. Species included meadow buttercup (*Ranunculus acris*), ragwort (*Senecio jacobaea*), thistles (*Cirsium s*p.), wild carrot (*Daucus carota*), rape (*Brassica napus*), kidney vetch (*Anthyllis vulnerary*), field bindweed (*Convolvulus arvensis*), cow parsley (*Anthriscus sylvestris*), clovers (*Trifolium spp*.), cleavers (*Galium aparine*), creeping cinquefoil (*Potentilla reptans*) and nettle (*Urtica dioica*).

Plate 3. WS1- Scrub

WS1- Scrub

Several areas on site were unmaintained and were let “go wild”. This was particularly evident on the north east corner of the site along the boundary wall. Species in this area included thistles (*Cirsium sp*.), creeping buttercup (*Ranunculus repens*), common ragwort (*Senecio jacobaea*), colt’s Foot (*Tussilago farfara*), winter heliotrope (*Petasites pyrenaicus*), hoary willowherb (*Epilobium parviflorum*), blackcurrant (*Ribes nigrum*), wild teasel (*Dipsacus fullonum*), butterfly-bush (*Buddleja davidii*), rosebay willowherb (*Chamaenerion angustifolium*), hedge bindweed (*Calystegia sepium*), ivy (Hedera helix), honeysuckle (*Lonicera periclymenum*), cleavers (*Galium aparine*), great willowherb (*Epilobium hirsutum*), common vetch (*Vicia sativa ssp. Segetalis*), bramble (*Rubus fruticosus agg*.), field forget-me-not (*Myosotis arvensis*), rape (*Brassica napus*), meadowsweet (*Filipendula ulmaria*), common mallow (*Malva sylvestris*), great mullein (*Verbascum thapsus*) and traveller's-joy (*Clematis vitalba*). It is important to note that an area of Indian Balsam (*Impatiens glandulifera*) was noted in a small area of damp ground in the north east corner of the site. This is an invasive species that is listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011) which makes it an offence under Regulation 49 to plant, disperse, allow or cause to grow this plant.

WL2- Treelines & Hedgerows WL1

Large mature treelines dominate the site particularly along the entrance driveway and to the south east of the main building. Combined with the scattered trees and parkland they provide a mature sylvian dominated landscape. Species include Corsican pine (*Pinus nigra sub sp*.), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), red oak (*Quercus rubra*), lime (*Tilia sp*.), birch (*Betula sp*.), blue cedar (*Cedrus Atlantica* ‘Glauca’), copper beech (*Fagus sylvatica 'Purpurea'*), horse chestnut (*Aesculus hippocastanum*). As seen in Figure 8-11 a Leisler’s bat roost was noted in a horse chestnut tree (0401) to the east of the main building.

Hedgerows are present on site but these are made up primarily of non native ornamental species including Leyland Cypress (*Cupressocyparis x leylandii*), Contoneaster sp., Griselinia (*Griselinia littoral*s), privet (*Ligustrum sp.*), Pittosporum sp., laurel (*Laurus nobilis*) and cherry laurel (*Prunus laurocerasu*s). However, some native species were noted including Hawthorn (*Crataegus monogyna*), Holly (Ilex aquifolium), yew (*Taxus baccata*), and elder (*Sambucus nigra*) were noted.

Plate 4. Brightly lit buildings on site. All buildings were inspected for bat use (inset).

BL-Built Land

As previously stated, the proposed development site is maintained to a high level with the use of herbicide evident across the site. As seen in Appendix 8.3 (Of the Biodiversity Chapter) the buildings on site were inspected for bat presence and use. As stated in Appendix 8.3 (of the biodiversity Chapter), no evidence of bat use was noted within the buildings on site. It should be noted that the buildings on site are brightly lit with halogen lamps overnight and this would deter bats from using the buildings on site.

Evaluation of Species and Habitats on-site

Evaluation of Habitats

The site is relatively poor in biodiversity value. Much of the site is highly maintained with a strong management regime. No rare or protected habitats were noted. However, the treelines and mature trees within the scattered trees and parkland habitats would be deemed to be of local biodiversity importance primarily as a result of being a foraging and roosting habitat for both birds and bats.

Plant Species

The plant species encountered at the various locations on-site are detailed above. No protected species were noted. Records of rare and threatened species from NPWS were examined. No rare or threatened plant species were recorded in the vicinity of the Site. A small stand of Himalayan balsam (invasive species listed under S.I. 477) is noted on site.

Fauna

As outlined in the Mammal survey "The survey yielded few signs of mammals other than foxes (*Vulpes vulpes)*. Fox signs (droppings) were found at several locations on site and were observed freely roaming on site. Also noted were signs of brown rat Rattus norvegicus and fieldmouse *Apodemus sylvaticus*. Other species that will be present include the hedgehog *Erinaceous europaeus* and pygmy shrew *Sorex minutus*. The house mouse *Mus musculus* is likely to be present. The Irish hare Lepus *timidus hibernicus* was not observed on site. No signs of squirrels were seen. Red squirrel *Sciurus vulgaris* are not likely to occur on site given the lack of suitable habitat. Other fauna of interest that might occur on site include common frogs *Rana temporaria* and common lizards *Lacerta vivipara*. Frogs are to be expected on site as they are common in rank grasslands which provide good foraging habitat. However, only one very small pool was seen on site and no frog spawn was present at time of survey. The common or viviparous lizard occurs in many habitats in Ireland and is potentially present on site.

Bat fauna

A bat survey was carried out which included a bat emergent and detector survey (Appendix 8.3). The survey also carried out an inspection of the buildings on site and static detector s were placed on site. As outlined Appendix 8.3 of the Biodiversity Chapter of the EIAR "*No evidence of bat activity was noted in the buildings on site. No bats emerging onsite buildings were noted. However, a single Leisler's bat was observed bat was emerging from a Horse Chestnut (Tree 0401) on the eastern section of the site. Foraging activity was also noted of a common pipistrelle (to the south of the drain on site and around the farm buildings to the north east of the site*." The removal of the trees on site will result in a loss of foraging areas and a loss in potential bat roosts.

Avian Fauna

Wintering bird assessments are seen in Appendix 2 and Appendix 3. As outlined in Appendix 2 "Black-headed gull flocks of county importance (>90 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site. Brent goose flocks of county importance (>84 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site and curlew flocks of county importance (>29 birds; 1% of the county population) were observed on two occasions commuting over the proposed development site. Flocks of importance relative to the local population (1% of the Dublin Bay I-WeBS site population) were recorded for black-headed gull on fifteen occasions, brent goose on one occasion and curlew on four occasions." "On the 4th of January, curlew were observed using an area of amenity grassland within the proposed development site for foraging. Herring gull, black-head gull, lesser black-backed gull and common gull were frequently observed using the proposed development site for foraging and roosting. Black-headed gull and herring gull were observed regularly commuting over the proposed development. Curlew and brent geese were observed commuting over the proposed development site infrequently." The updated wintering bird assessment relating to the 2021/2022 season (Appendix 3) noted that "Of the target species of the bird survey, only one SCI species listed for the Special Protection Areas within the ZOI of the proposed development was recorded. This was Black-headed Gull. This species was also recorded in the previous survey by MKO (2021). Two other SCI species recorded in the previous survey (Curlew and Brent Goose) were not recorded within the survey period of this present survey."

In addition to the birds noted in Appendices 2 & 3, the following birds were noted on site:

Table AI.1. *Bird species noted on site*

Common Name	***Scientific Name***
Woodpigeon	*Columba palumbus*
Wren	*Troglodytes troglodytes*
Robin	*Erithacus rubecula*
Blackbird	*Turdus merula*
Blue tit	*Parus caeruleus*
Starling	*Sturnus vulgaris*
Great tit	*Parus major*
Rook	*Corvus frugilegus*
Song Thrush	*Turdus philomelos*
Dunnock	*Prunella modularis*
Goldfinch	*Carduelis carduelis*
Hooded Crow	*Corvus cornix*
Herring gull (on roof possibly nesting)	*Larus argentatus*
Magpie	*Pica pica*
Great tit	*Corvus monedula*

Invasive Species

Himalayan balsam (*Impatiens glandulifera*) was noted on site. No other invasive plant or animal species listed under the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) Section 49, the Third Schedule: Part 1 Plants, Third Schedule: Part 2A Animals were noted on site.

Appendix 2:

Winter Bird Survey Report 2020/2021

TPA Bird Surveys,
Dundrum, Co. Dublin

DOCUMENT DETAILS

Client:	TPA
Project Title:	TPA Bird Surveys, Dundrum, Co. Dublin
Project Number:	200828
Document Title:	Winter Bird Survey Report 2020/2021
Document File Name:	200828 – F– Winter Bird Survey Report 2020/2021 – 2021.06.01
Prepared By:	MKO Tuam Road Galway Ireland H91 VW84

Planning and Environmental Consultants

Rev	Status	Date	Author(s)	Approved By
01	Draft	16/04/2021	KS	PM
02	Draft	04/05/2021	KS/PM	DO'D
02	Final	01/06/2021	KS/PM	DO'D

Table of Contents

TABLE OF TABLES

1. INTRODUCTION

McCarthy Keville O'Sullivan (MKO) was appointed to carry out bird survey works at Dundrum, County Dublin during the period from September 2020 to March 2021 inclusive. The proposed development scheme consists of a large housing development on an area of built land dominated by hospital buildings alongside areas of amenity grassland. The site is approximately 11.4 ha in area and is located between the River Dodder to the north and Dundrum Town Centre to the south (Grid reference: 53.299560, -6.242815). Figure 1 (Appendix 2) provides a map of the location of the proposed development boundary.

This report describes the ornithological survey methods employed and survey data collected at Dundrum, County Dublin for the period from September 2020 to March 2021 inclusive. This report also contains information compiled during the desktop study. Particular attention has been paid to species of conservation importance and identified target species.

The report is supported by Technical Appendix 1 which contains the raw data from the winter bird surveys in 2020/2021. This includes detail on survey times, weather conditions, surveyors, survey results and other additional information. Maps containing flight data and significant flocks observed during surveys are shown in Appendix 2.

The report is structured as follows:

- An introduction describing the background and statement of authority regarding ornithological works.
- A description of the desktop study carried out with regard to the site.
- A comprehensive description of survey methods.
- A full description of results for all ornithological surveys conducted.
- A discussion of the potential impacts.

The following defines terms used in this report:

- "Zones of Influence" (ZOI) for potential ornithological receptors refers to the zone within which potential effects are anticipated. ZOIs were assigned following the best available guidance (SNH 2016 and McGuinness et.al 2015).

1.1 Statement of Authority

This report has been prepared by Kathryn Sheridan (M.Sc.), an Ornithologist with MKO, Patrick Manley (B.Sc.), a Project Ornithologist with MKO and Project Director, Dervla O'Dowd (B.Sc. Env.). The field surveys were undertaken in the 2020/2021 winter season by Donnacha Woods and Kathryn Sheridan, both of whom are competent experts in bird surveying.

CVs for the authors of this report and all personnel who carried out survey work are provided in Appendix 3.

2. DESK STUDY

2.1 Desk Study Methods

A comprehensive desk study was undertaken prior to surveys in winter 2020 to search for any relevant information on species of conservation concern which may potentially make use of the study area. The assessment included a thorough review of the available ornithological data including:

- Review of online web-mappers: National Parks and Wildlife Service (NPWS), National Biodiversity Data Centre (NBDC), Irish Wetland Bird Survey I-WeBS.
- Review of Birds of Conservation Concern (BoCCI) in Ireland 2020-2026 (Gilbert, et al. 2021)
- Review of Special Protection Areas: including site synopsis, SCI species and conservation objectives.

2.2 Desk Study Results

2.2.1 Identification of Designated Sites within the Likely Zone of Influence

In the absence of any specific European or Irish guidance on the core foraging range, the Scottish Natural Heritage (SNH) Guidance, 'Assessing Connectivity with Special Protection Areas (SPA)' (2016) was consulted. This document provides guidance concerning the identification of connectivity between proposed development proposals and Special Protection Areas. The guidance takes into consideration the distances some species may travel beyond the boundary of their SPAs and outlines information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects. Using GIS software, SPAs within a potential 15km ZOI of the proposed development were identified.

The nearest SPA, South Dublin Bay and Tolka River Estuary SPA is located to the northeast of the proposed development opposite the N11. The SPA is located 2.8km from the proposed development area and comprises the intertidal area between the River Liffey and Dun Laoghaire, the River Tolka estuary to the north of the River Liffey and Booterstown Marsh. The SPA is an important foraging site for an internationally important population of Brent Geese due to the beds of Eelgrass at the Merrion Gates and serves as an important staging/passage site for several tern species in autumn.

Designated sites located within the Likely Zone of Influence are listed below in Table 2-1 and illustrated in Appendix 2, Figure 2.

Table 2-1 Designated sites within likely zone of influence

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
South Dublin Bay and River Tolka Estuary SPA (004024)	2.8km northeast of the proposed development site	› Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] › Oystercatcher (*Haematopus ostralegus*) [A130] › Ringed Plover (*Charadrius hiaticula*) [A137] › Grey Plover (*Pluvialis squatarola*) [A141] › Knot (*Calidris canutus*) [A143] › Sanderling (*Calidris alba*) [A144] › Dunlin (*Calidris alpina*) [A149] › Bar-tailed Godwit *(Limosa lapponica*) [A157] › Redshank (*Tringa totanus*) [A162] › Black-headed Gull (*Chroicocephalus ridibundus*) [A179] › Roscate Tern (*Sterna dougallii*) [A192] › Common Tern (*Sterna hirundo*) [A193] › Arctic Tern (*Sterna paradisaea*) [A194] › Wetland and Waterbirds [A999]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests of this SPA." This site also has a second conservation objective: "To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it." NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
North Bull Island SPA (004006)	6km to the northeast of the proposed development site	› Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] › Shelduck (*Tadorna tadorna*) [A048] › Teal (*Anas crecca*) [A052] › Pintail (*Anas acuta*) [A054] › Shoveler (*Anas clypeata*) [A056] › Oystercatcher (*Haematopus ostralegus*) [A130] › Golden Plover (*Pluvialis apricaria*) [A140] › Grey Plover (*Pluvialis squatarola*) [A141]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests of this SPA." This site also has a second conservation objective:

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
		› Knot (*Calidris canutus*) [A143] › Sanderling (*Calidris alba*) [A144] › Dunlin (*Calidris alpina*) [A149] › Black-tailed Godwit (*Limosa limosa*) [A156] › Bar-tailed Godwit (*Limosa lapponica*) [A157] › Curlew (*Numenius arquata*) [A160] › Redshank (*Tringa totanus*) [A162] › Turnstone (*Arenaria interpres*) [A169] › Black-headed Gull (*Chroicocephalus ridibundus*) [A179] › Wetland and Waterbirds [A999]	"To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it" NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Wicklow Mountains SPA	7.4km south of the proposed development site	› Merlin (*Falco columbarius*) [A098] › Peregrine (*Falco peregrinus*) [A103]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA" Citation: NPWS (2021) Conservation objectives for Wicklow Mountains SPA [004040]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
Dalkey Islands SPA (004172)	9.8km east of the proposed development site	› Roscate Tern (*Sterna dougallii*) [A192] › Common Tern (*Sterna hirundo*) [A193] › Arctic Tern (*Sterna paradisaea*) [A194]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA"

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
			NPWS (2021) Conservation objectives for Dalkey Islands SPA [004172]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
Baldoyle Bay SPA (004016)	12.9km northeast of the proposed development site	› Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] › Shelduck (*Tadorna tadorna*) [A048] › Ringed Plover (*Charadrius hiaticula*) [A137] › Golden Plover (*Pluvialis apricaria*) [A140] › Grey Plover (*Pluvialis squatarola*) [A141] › Bar-tailed Godwit (*Limosa lapponica*) [A157] › Wetland and Waterbirds [A999]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests of this SPA." This site also has a second conservation objective: "To maintain the favourable conservation condition of the wetland habitat in Baldoyle Bay SPA" NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Howth Head Coast SPA (004113)	14.1km northeast of the proposed development site	› Kittiwake (*Rissa tridactyla*) [A188]	This site has detailed conservation objectives for each species listed as Qualifying Interests of the SPA: "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA"

Designated site and code	Distance from proposed development (Km)	Qualifying Interests/Special Conservation Interests for which the European Site has been designated (https://www.npws.ie, last viewed 13/04/2021)	Conservation Objectives
			NPWS (2021) Conservation objectives for Howth Head Coast SPA [004113]. Generic Version 8.0. Department of Housing, Local Government and Heritage.

2.2.2 Irish Wetland Bird Survey (IWeBS) Records

The dataset for Dublin Bay (which incorporates the South Dublin Bay and Tolka River Estuary SPA) was downloaded from www.birdwatchireland.ie and reviewed. Data from this I-WeBS site has been used to estimate the population of waterbirds in the area surrounding the proposed development area. The most recent 5-season period and mean counts for this period are presented in Table 2-2.

Table 2.2 I-WeBS data for Dublin Bay

Species	2013/14	2014/15	2015/16	2016/17	2017/18	5- season mean 2013/14-2017/18:
Mute Swan	5	6	9	6	12	8
Light-bellied Brent Goose	3717	4862	4195	4420	3331	4105
Shelduck	961	2927	744	1811	1611	1611
Wigeon	691	2201	1106	1839	918	1351
Gadwall	2	2	-	-	-	1
Teal	1378	1233	1291	1654	1092	1330
Mallard	97	106	120	70	111	101
Pintail	200	150	124	190	222	177
Shoveler	126	97	115	116	144	120
Long-tailed Duck	1	-	-	2	-	1
Common Scoter	42	-	40	19	65	33
Goldeneye	-	2	1*	1	-	1
Red-breasted Merganser	60	57	69	80	53	64
Goosander	-	-	-	-	2	0
Red-throated Diver	7	2	7	6	5	5
Great Northern Diver	3	-	5	1	2	2
Little Grebe	1	5	-	4	4	3
Great Crested Grebe	755	143	307	193	60	292
Red-necked Grebe	1	-	-	-	-	0
Cormorant	198	41	71	170	199	136
Shag	36	3	71	19	22	30
Little Egret	59	69	59	71	87	69
Grey Heron	68	40	44	30	29	42
Moorhen	5		5	3	2	3
Oystercatcher	3074	3315	3588	4042	3521	3508
Ringed Plover	139	121	109	208	285	172
Golden Plover	1080	742	1155	1010	2501	1298
Grey Plover	310	452	240	245	248	299
Lapwing	52	54	143	25	32	61
Knot	4547	4950	2495	5850	6555	4879
Sanderling	510	266	841	374	800	558
Purple Sandpiper	2	1	2	-	-	1
Dunlin	5907	3603	3376	8280	7484	5730
Snipe	20	-	31	53	57	32

Species	2013/14	2014/15	2015/16	2016/17	2017/18	5- season mean 2013/14-2017/18:
Black-tailed Godwit	1768	873	2185	1274	1479	1516
Bar-tailed Godwit	1710	1658	2173	2653	1934	2026
Whimbrel	2	4	-	-	-	1
Curlew	932	1424	567	834	494	850
Spotted Redshank	1	-	3	-	-	1
Greenshank	34	47	78	35	47	48
Redshank	2460	1889	1648	1430	2274	1940
Turnstone	466	250	584	286	334	384
Mediterranean Gull	39	27	64	68	6	41
Black-headed Gull	2649	1259	2768	2731	3802	2642
Ring-billed Gull	-	-	-	1	-	0
Common Gull	985	272	890	213	321	536
Lesser Black-backed Gull	5	20	16	5	14	12
Herring Gull	490	261	538	461	607	471
Yellow-legged Gull	1	-	2	1	-	1
Iceland Gull	-	-	-	1	-	0
Glaucous Gull	-	-	-	1	-	0
Great Black-backed Gull	190	52	263	151	115	154
Sandwich Tern	52	-	8	-	9	14
Common Tern	39	-	1	2	2	9
Common/ Arctic Tern	-	-	-	105	-	21
Kingfisher	1	-	1	-	-	0

As previously discussed, data from I-WeBS sites in County Dublin has been used to estimate County populations of wintering waterbirds discussed in this report. Datasets for the following sites were downloaded from www.birdwatchireland.ie and reviewed:

Dublin IWeBS Sites

- Baldoyle Bay
- Brittas Pools
- Broadmeadow (Malahide) Estuary
- Delvin River – Hampton Cove
- Dublin Bay
- Dublin Zoo Ponds
- Grand Canal (Dublin)
- Hick's Tower and Robswall
- Hynestown Lake Naul
- Ireland's Eye
- Knock Lake
- Lambay Island
- Mountseskin/Gortlum
- Portmarnock Marsh

- Rockabill
- Rogerstown Estuary
- Seagrange Park
- Skerries Coast
- Skerries Islands
- Skerries, Baldongan
- South Dublin Coastline
- St. Stephen's Green
- Tymon Park

2.2.3 Method of Identification of Target Species

Following a comprehensive desk study by MKO, initial site visit and consultation, a list of "Target species" likely to occur at the site was compiled. The survey work carried out on the site was specifically designed to survey for these identified target species. The target species list was drawn from:

- Annex I of the Birds Directive,
- Special Conservation Interests (SCI) of Special Protection Areas (SPA) within the zone of likely significant effects,
- Red listed birds of Conservation Concern in Ireland,
- Species with the potential to be impacted by this type of development.

All species within these categories were considered as target species for the purpose of these surveys.

3. FIELD SURVEYS

3.1 Field Survey Methods

This section of the report describes the various field survey methods employed. Field surveys were undertaken from September 2020 – March 2021 inclusive. Field survey methodologies have been devised to survey for the bird species composition and assemblages that occur within the study area.

3.1.1 Initial Site Assessment

Based on the results of the desk study, the likely importance of the study area for bird species was determined. Based on the collated information available from the above preliminary assessment and adopting a precautionary approach, a site-specific scope for the ornithological surveys was developed.

3.1.2 Vantage Point Surveys

Vantage Point surveys were undertaken to determine the presence of bird species of high conservation concern within areas of potentially suitable habitat in the study area. These surveys were undertaken in the form of a vantage point watch overlooking the proposed development boundary. Due to the number of buildings within the proposed development site which partially obscured the view, three vantage points within the development site were required to provide good coverage of all amenity grassland habitats within the proposed development site.

The survey was undertaken (onsite) over two three-hour periods[1] (morning and afternoon), which included the two hours on either side of high tide, as this is the period when birds from the nearby SPAs are most likely to make use of terrestrial habitats, such as those present within the proposed development site. The main aim of the survey was to identify if SCIs from the nearby SPAs were utilising areas onsite for foraging or roosting. Along with target species, all additional species observed were recorded to inform the evaluation of supporting habitat.

Survey effort, including details of survey duration and weather condition, is presented in Appendix 1, Table 1-1. Figure 1 in Appendix 1 shows the survey study area.

3.1.3 Walkover and Habitat Surveys

Transect routes were walked during each survey to assess the quality and composition of habitats at various points (10 maximum) within the proposed development boundary. Transect routes were devised to ensure coverage of different habitat complexes within the study area, during each survey visit. At each point grass sward height, percentage of grass, percentage of forb species and percentage of bare ground was recorded. The abundance of brent geese droppings present at each transect point was also recorded during these surveys. Results of these habitat transects are presented in Table 3-4 below.

A further consideration during the walkover was to identify signs (e.g. droppings) of bird species of high conservation concern within areas of potentially suitable habitat in the study area. The walkover survey was undertaken within the redline boundary.

The survey was undertaken (onsite) within two hours of high tide, as this is the period when birds from the nearby SPAs are most likely to make use of terrestrial habitats, such as those present within the proposed development area. The main aim of the survey was to identify if SCIs from the adjacent SPA

[1] *With the exception of the September and the first visit in October, these surveys focused on a two hour period overlapping with high/low tides.*

were utilising areas onsite for foraging or roosting. Along with target species, all additional species observed were recorded to inform the evaluation of supporting habitat.

Survey effort, including details of survey duration and weather condition, is presented in Appendix 1, Table 1-1. Figure 1 in Appendix 1 shows the survey study area.

3.1.4 Survey Justification

A comprehensive suite of bird surveys was undertaken at the site between September 2020 and March 2021, as detailed in this report.

The surveys undertaken provide the information necessary to allow a complete, comprehensive and robust assessment of the potential impacts of the proposed development on avian receptors.

3.2 Field survey results

3.2.1 Survey Effort

Surveys were undertaken between the 16th of September 2020 and the 24th of March 2021. Two visits a month were undertaken during this period, with 12 surveys carried out in total. Table 3-1 shows the survey effort for the 2020/2021 winter season.

Table 3-1 Survey Effort

Survey Date	Survey Duration	Surveyor
16/09/2020	2:00 starting at 11:00	DW
28/09/2020	2:00 starting at 09:30	DW
14/10/2020	2:00 starting at 09:15	DW
30/10/2020	6:00 starting at 09:15	DW
13/11/2020	6:00 starting at 09:30	DW
26/11/2020	6:00 starting at 09:30	DW
18/12/2020	6:45 starting at 09:00	KS
04/01/2021	6:00 starting at 09:00	KS
18/01/2021	3:00 starting at 09:00	KS
18/01/2021	3:00 starting at 13:00	KS
29/01/2021	3:00 starting at 09:00	KS
29/01/2021	3:00 starting at 13:00	KS
12/02/2021	3:00 starting at 09:00	KS
12/02/2021	3:00 starting at 13:00	KS
26/02/2021	3:00 starting at 09:00	KS
26/02/2021	3:00 starting at 13:00	KS
12/03/2021	3:00 starting at 09:00	KS
12/03/2021	3:00 starting at 13:00	KS
24/03/2021	3:00 starting at 09:00	KS
24/03/2021	3:00 starting at 13:00	KS

3.2.2 Vantage Point Survey Results

As previously discussed, surveys were undertaken at the proposed development between September 2020 and March 2021 inclusive. Summary results from the vantage point surveys are presented below in Table 3-2 and Table 3-3, and discussed in further detail in Section 4 of this report. Figure numbers refer to figures provided in Appendix 2.

Table 3-2 Total number of each species recorded commuting over the proposed development site during surveys (Peak Counts for each species are presented in bold)

Species	Conservation Status	September		October		November		December	January			February		March		Figure No.
		16th	28th	14th	30th	13th	26th	18th	4th	18th	29th	12th	26th	12th	24th	
Black-headed Gull	BoCCI Red Listed (Breeding Populations)	-	-	-	-	-	-	**505**	198	77	185	215	73	3	4	Figure 1
Brent Goose	BoCCI Amber Listed	-	-	-	-	-	-	-	**-**	-	-	-	-	**106**	-	Figure 2
Common Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	**-**	-	13	3	3	5	13	**16**	12	-	Figure 3
Curlew	BoCCI Red Listed	-	-	-	-	-	-	**70**	35	-	**-**	-	-	-	-	Figure 4
Little Egret	Annex I; BoCCI Green Listed	-	-	-	-	-	-	-	**1**	-	**-**	-	-	-	-	Figure 5
Great Black-backed Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	-	-	**1**	-	-	-	-	**-**	Figure 6
Herring Gull	BoCCI Red Listed (Breeding Populations)	-	-	-	-	-	**-**	**220**	62	190	112	55	56	78	79	Figure 7
Lesser Black-backed Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	-	-	-	-	3	4	7	**22**	Figure 8
Mallard	BoCCI Amber Listed	-	-	-	-	-	-	-	**6**	-	-	**-**	-	2	**6**	Figure 9

Table 3-3 Total number of each species recorded on, or within 500m of, the proposed development site (i.e. observed foraging/roosting) (Peak Counts for each species are presented in bold)

Species	Conservation Status	September		October		November		December	January			February		March		Figure No.
		16th	28th	14th	30th	13th	26th	18th	4th	18th	29th	12th	26th	12th	24th	
Black-headed Gull	BoCCI Red Listed (Breeding Populations)	-	-	9	5	46	23	13	36	38	15	**46**	21	-	-	Figure 1.1.1
Common Gull	BoCCI Amber Listed (Breeding Populations)	-	-	1	3	**5**	1	-	2	-	2	4	-	-	-	Figure 1.3.1

Species	Conservation Status	September		October		November		December	January			February		March		Figure No.
		16th	28th	14th	30th	13th	26th	18th	4th	18th	29th	12th	26th	12th	24th	
Curlew	BoCCI Red Listed	-	-	-	-	-	-	-	**24**	-	-	-	-	-	-	Figure 1.4.1
Little Egret	Annex I; BoCCI Green Listed	-	-	-	-	-	**1**	-	**-**	-	-	-	-	-	-	
Herring Gull	BoCCI Red Listed (Breeding Populations)	2	20	-	-	**95**	28	94	15	9	-	-	5	-	1	Figure 1.7.1
Lesser Black-backed Gull	BoCCI Amber Listed (Breeding Populations)	-	-	-	-	-	-	-	-	-	-	-	-	1	**2**	Figure 1.8.1

3.2.3 Walkover and Habitat Survey Results

Habitat quality and composition were recorded along walked transects within the proposed development were assessed at visits between November and March inclusive. The monthly range and averages of habitat compositions are detailed in Table 3-4 below. Also included are average monthly sward heights and the abundance of brent goose droppings.

Table 3-4 Habitat quality and composition of walked transects within the proposed development. Also included is the abundance of brent geese droppings observed on transects.

Month	Sward Height (cm)	Grass (%)		Forbs (%)		Bare Ground (%)		Number of Droppings
		Range	Average	Range	Average	Range	Average	
November	9.3	60-100	86	0-40	13.5	0-5	0.2	0
December	8.9	80-100	94.8	0-20	5.2	0	0	0
January	11	80-100	93.9	0-20	6	0	0	0
February	7.5	90-100	97.1	0-10	2.9	0	0	0
March	6.9	80-100	96.2	0-20	3.8	0	0	0

4. DISCUSSION

The following provides a synopsis of the findings of the surveys undertaken between September 2020 and March 2021.

Within the proposed development site and/or within 500m of the site, the following key observations were noted:

- On the 4th of January, curlew were observed using an area of amenity grassland within the proposed development site for foraging.
- Herring gull, black-head gull, lesser black-backed gull and common gull were frequently observed using the proposed development site for foraging and roosting.
- Black-headed gull and herring gull were observed regularly commuting over the proposed development.
- Curlew and brent geese were observed commuting over the proposed development site infrequently.

Key impacts that could result from the proposed development on local avian receptors include habitat loss, disturbance/displacement and water pollution.

The proposed development is currently in use as a hospital facility, with amenity grasslands regularly maintained and mown by gardeners on-site. These grasslands have a short grass sward length (6.9-11cm; see Table 3-4) which would be favourable to SCI species, however, these grasslands are frequently accessed for recreational use leading to a high level of disturbance. Curlew were observed twice on an amenity grassland used as a walking area/football pitch within the proposed development, however, the flocks were flushed due to disturbance on both occasions.

Of the SCI species listed for the SPAs within the ZOI, black-headed gull, brent goose and curlew were observed on, or within 500m of, the proposed development site. There were no flocks of county importance observed roosting or foraging within the proposed development site for any of these species (see Table 3-3).

Black-headed gull flocks of county importance (>90 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site. Brent goose flocks of county importance (>84 birds; 1% of the county population) were observed on one occasion commuting over the proposed development site and curlew flocks of county importance (>29 birds; 1% of the county population) were observed on two occasions commuting over the proposed development site. Flocks of importance relative to the local population (1% of the Dublin Bay I-WeBS site population) were recorded for black-headed gull on fifteen occasions, brent goose on one occasion and curlew on four occasions.

The potential for birds commuting over the site to be impacted by construction activities is considered to be limited. There is the potential for disturbance/displacement and habitat loss for species observed utilising habitats within the proposed development site during the construction phase. If impacts are assessed to be significant, the likelihood is that disturbance/displacement impacts can be avoided or reduced by imposing suitable mitigation measures. Such mitigation could include limiting construction activities to the summer when wintering birds are not present.

5. CONCLUSION

There are six SPAs within the ZOI, the nearest SPA to the proposed development is South Dublin Bay and River Tolka Estuary SPA (2.8km to the northeast). Of the SCI species listed for the SPAs within the ZOI, black-headed gull, brent goose and curlew were the only species recorded commuting or foraging on, or within 500m of, the proposed development.

The proposed development site is not within a SPA, however, given the proximity of several SPAs, there may be potential for impacts to result during construction and operational phases of the proposed development on birds that are associated with these SPAs. Potential impacts could include:

- Loss of potential foraging/roosting habitat within the proposed development site.
- Disturbance/displacement during construction works and the operational phase, including through movement of machinery, personnel, noise, vibration and/or noise associated with domestic dwellings.
- Water pollution of downstream SPAs.

The maximum likely distance at which disturbance will impact SCIs from a SPA is 300m (Cutts et al., 2013) from the proposed development boundary. Given the separation distance from the SPAs, disturbance impacts within SPAs are not anticipated. However, given the level of activity of black-headed gull at the development site, disturbance/displacement and habitat loss impacts during the construction phase cannot be ruled out. The peak number of black-headed gull observed foraging within the proposed development were not of county importance for this species, therefore it is unlikely that disturbance to this species will be ecologically significant. It is unlikely that there will be any significant disturbance/displacement of curlew in the proposed development site, given the lack of evidence that the site is used with any regularity. Brent geese were not observed foraging or roosting within the proposed development (Table 3-3) nor was there any evidence of geese on the proposed development (Table 3-4). Therefore significant disturbance/displacement of brent geese are not anticipated at the proposed development site.

When built, the proposed housing scheme may result in disturbance of SCIs of the SPAs within the likely ZOI of the proposed development site. However, habituation will likely occur to this new source of disturbance given that the SCIs of the SPA are already accustomed to the disturbance associated with Dundrum town and existing surrounding housing developments.

A wide range of environmental factors are required to support water bird species including good water quality and clarity and a good supply of food resources. Thus, water quality impacts resulting from the proposed development (i.e. during the construction and operational phases) could result in a reduction in the availability of suitable habitat for water bird species at downstream wetland sites. The effect of such a reduction in water quality has the potential to be ecologically significant. However, it is likely that best practice design and mitigation can be implemented that would avoid or reduce such impacts.

BIBLIOGRAPHY

Birds Directive (2009/47/EC) – http://ec.europa.eu/environment/nature /legislation/birdsdirective /index _en.htm

Bibby, C.J., Burgess, N.D., Hill, D.A., and Mustoe, S. (2000) *Bird Census Techniques.* Academic Press, London.

Birds of conservation concern in Ireland 2014-2019 – https://www.birdwatchireland.ie/LinkClick.aspx?fileticket=VcYOTGOjNbA%3D&tabid=178

Burke, B., Lewis, L.J., Fitzgerald, N., Frost, T., Austin, G., and Tierney, T.D. (2018) *Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16* Irish Birds

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Directive 2009/147/EC (codified version of Directive 79/409/EEC as amended) (Birds Directive) – transposed into Irish law as European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011).

Cutts, N., Hemingway, K. and Spencer, J. (2013). *Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects.* Institute of Estuarine & Coastal Studies (IECS) University of Hull

Gilbert et al. (1998) *Bird Monitoring Methods.* Pelagic Publishing.

Gilbert, G., Stanbury, A., and Lewis, L. (2021), *Birds of Conservation Concern in Ireland 2020-2026.* Irish Birds 9: 523-544

Mullarney, K., Svensson, L., Zetterström, D. and Grant, P. J. (1999). *Collins Bird Guide.* Harper Collins, London.

SNH (2016) *Assessing Connectivity with Special Protection Areas (SPAs) – Version 3, June 2016.* Scottish Natural Heritage.

www.npws.ie – Distribution maps and associated information for sites designated for nature conservation by NPWS (i.e. SPAs, SACs, NHAs, pNHAs)

IWeBS (2015). http://f1.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c. Irish Wetland Bird Survey Records.

Appendix 3:

Issue Date: 7 March 2022

Winter Bird Survey Report

Dundrum

Prepared for: TPA

By: Flynn Furney Environmental Consultants

Table of Contents

1. INTRODUCTION

1.1 This Report

Flynn Furney Environmental Consultants have been commissioned by TPA to carry out bird survey work at a site in Dundrum, Co. Dublin. These surveys were carried out over winter months in 2021 and 2022. The purpose of these surveys was to complete a suite of surveys previously carried out by consultants MKO during winter months in 2020 and 2021 and to compare results from the present survey with the previous work.

1.2 Site under Survey

The site under survey comprises the grounds of the Central Mental Hospital at the townland of Churchtown, Co. Dublin, c. 0.5 km north of Dundrum Village. The centre of the site is at 717162 729156 (ITM). The site contains a number of hospital and associated buildings as well as extensive green areas which include lawns, playing fields and a small amount of pasture. The site location is shown graphically in Appendix A. Given the sensitive nature of the site, the surveyor did not take any photographs during survey.

1.3 Statement of Authority

The survey work was carried out by Eric Dempsey. Eric has around 40 years' experience in ornithology and is a leading authority on Irish birds. He is the author of 8 books on Irish birds including the *Complete Field Guide to Irish Birds*. He is a listed Heritage Expert with The Heritage Council.

The report was written by Billy Flynn. Billy is a Chartered Environmental Scientist and Ecologist with over 20 years' experience. He has worked on a wide range of projects including national infrastructure such as motorway and rail projects. He is Lead Ecologist on a number of ongoing survey projects including greenways, lakes and sites of heritage significance.

2. METHODOLOGY

2.1 Desk Study

A review of the reporting by consultants MKO (2021) was carried out. A review of Irish Wetland Birds data (IWeBS) records as reported in the above was also carried out as well as a review of the Special Conservation Interests (SCIs) of the Special Protection Areas (SPAs) within the zone of influence (ZOI) of the project as identified by MKO.

As detailed in the above reporting, there are several SPAs within the possible zone of influence of the site under survey. These are shown in Appendix A. Species that are Special Conservation Interests of the SPAs were specifically targeted by the survey as were birds of greatest conservation concern (the 'Red Listed' species, see Gilbert et al., 2021) and any other birds that are on Annex I of the EU Birds Directive.

2.2 Field Survey

2.2.1 Vantage Point Surveys

Field survey methodology followed that utilised by MKO (2021). Vantage Point surveys as detailed by Bibby et al. (2000) were carried out. As per the previous MKO work, these were carried out from 3 no. points within the grounds of the site. They were chosen for the maximum field of view of the grassland areas of the site. Surveys were undertaken over 2 no. 3 hour periods (morning & afternoon) which includes a 2-hour period either side of the high tide on these days. This would capture the time period when the target species of the SPAs would be most likely to utilise the site at Dundrum.

2.2.2 Walkover/Habitat Surveys

A walkover survey of the site was carried out in order to confirm the location, character and extent of habitats as recorded in the survey by MKO (2021). Further, more targeted walkover surveys were carried out throughout the duration of the project in order to identify droppings of target species birds (e.g. geese) within the grassland areas of the site.

2.2.3 Survey Effort

Surveys as described above were carried out at Dundrum between 24 November 2021 and 28 February 2022. This amounted to 7 no. survey days of 6 hour's duration, a total of 42 hours survey time.

3. RESULTS

3.1 Vantage Point Surveys

The results of the target species recorded during surveys undertaken between November 2021 and January 2022 are summarised in the table below:

Table 1. Total of hourly peak species counts for each species recorded.

Species	Conservation status	November	December	January	February
Black-headed Gull	Greatest Conservation Concern (Red list)	7	64	45	29
Herring Gull	Greatest Conservation Concern (Red List)	20	136	106	161
Common Gull	Medium Conservation Concern (Amber List)	0	9	0	0
Little Egret	Least Conservation Concern (Green List), Annex I Species	0	1	0	0

Table 2. Peak species counts for each species recorded.

Species	Conservation status	November	December	January	February
Black-headed Gull	Greatest Conservation Concern (Red list)	2	11	8	7
Herring Gull	Greatest Conservation Concern (Red List)	5	51	19	36
Common Gull	Medium Conservation Concern (Amber List)	0	5	0	0
Little Egret	Least Conservation Concern (Green List), Annex I Species	0	1	0	0

3.2 Walkover / Habitat Surveys

The results of the walkover survey and habitat description are summarised in the table below.

Table 3. Species composition per month

Month	Grass	Forb	Bare Ground
	(approximate % surface area)		
November	>90	<10	<1
December	>90	<10	<1
January	>90	<10	<1
February	>90	<10	<1

The results of the search for droppings of geese are shown in the table below.

Table 4. Droppings found per month

Month	No of Droppings
November	0

December	0
January	0
February	0

4. DISCUSSION

This section of the report summarises the results of the surveys carried out between 24 November 2021 and 28 February 2022. The results may be seen in full in Appendix B of this report.

A total of four of the target species were recorded foraging or roosting within site proposed for development. These were: Herring Gull *Larus argentatus*, Black-headed Gull *Larus ridibundus,* Common Gull *Larus canus* and Little Egret *Egretta garzetta*.

Of these, Herring Gull was recorded in greatest numbers. The highest peak count for this species being 51 no. on the 8 December 2021. Of the above, Black-headed Gull is the only Special Conservation Interest (SCI) species of any of the SPAs within the likely zone of influence (ZOI) of the project.

No Curlew *Numenius arquata* were recorded utilising the site. In conversation with members of grounds staff, the ornithologist was told that Curlew has occasionally been seen within the site but not in "recent" times. Brent Goose was not recorded within the survey period.

The habitat surveys carried out were largely in line with the results of the MKO surveys (2021) which showed a dominance of grass species (>90%) across the areas surveyed and non-grass species (forbs) being consistently less than 10% of surface area. The grass was seen to be well-maintained throughout the site and areas of bare ground were rare (<1%). Consistent with the MKO survey, no droppings of any goose species were found during the survey period.

The findings of the bird surveys would indicate that there is only limited potential for disturbance or displacement of the SCI species of the SPAs within the ZOI arising from the proposed development. It is not predicted that the proposed development would result in any habitat loss of any significance to any SCI species. This is based upon the low numbers of the only SCI species recorded and the availability of similar habitat type (amenity grassland) within the immediate and wider areas.

Surveys of the site are ongoing at time of writing. It is recommended that the surveys are continued until the end of March (2022) as per the methodology of the present survey.

5. CONCLUSION

Of the target species of the bird survey, only one SCI species listed for the Special Protection Areas within the ZOI of the proposed development was recorded. This was Black-headed Gull. This species was also recorded in the previous survey by MKO (2021). Two other SCI species recorded in the previous survey (Curlew and Brent Goose) were not recorded within the survey period of this present survey.

No direct impacts to any of the SPAs within the ZOI may be expected. This is given the remove of these sites from the area proposed for development and the lack of connectivity between this and the protected sites. Indirect effects on the SPAs (e.g. on water quality) are considered unlikely given the nature of the proposed development and the lack of connectivity to these designated sites. As described in the MKO report, best practice design and site practice would prevent such impacts from arising.

While some disturbance and displacement impacts may occur to the SCI species recorded, this would not be deemed to be of potential significance. This is due to the habituation of this species to anthropogenic disturbance within the site and wider urban area and its likely habitation to any disturbance resulting from the proposed development.

Some loss of foraging habitat for this species will occur. However, this is not considered significant given the relative abundance of this habitat type (amenity grassland) within both the immediate and wider areas surrounding the site.

It is recommended that the ongoing surveys are continued until the end of March 2022.

6. REFERENCES

Print

Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S (2000) *Bird Census Techniques*. Academic Press, London.

Gilbert, G, Stanbury, A, & Lewis, L (2021) Birds of Conservation Concern in Ireland 4: 2020 –2026. *Irish Birds 43:* 1—22.

MKO (2021) *Winter Bird Survey Report 2020/21. TPA Bird Surveys, Dundrum, Co. Dublin*. Unpublished report by MKO for TPA.

Web Resources

www.npws.ie National Parks and Wildlife Service: Designated site data and shapefiles.

www.birdwatchireland.ie & http: c0amf055.caspio.com: Species data and iWeBS (wetland birds) records.

Appendix A: Site Location & Designated Sites

Fig. 1. Site Location and Survey Area

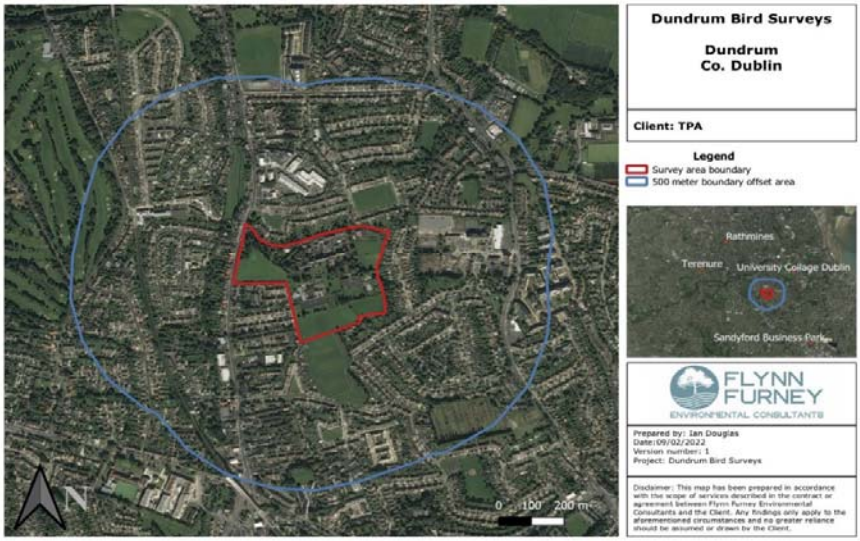
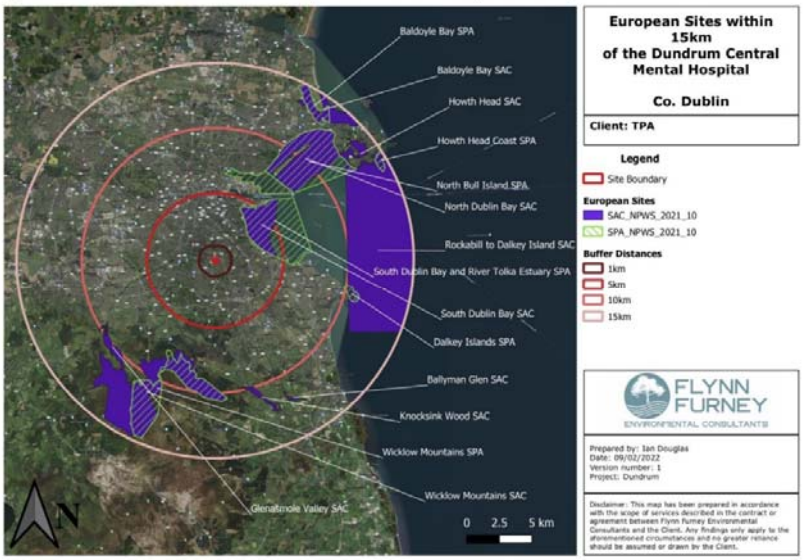


Fig. 2. Location of Natura 2000 sites within Likely Zone of Influence of Proposed Development



Appendix B: Survey Data

Dundrum Survey - 2021						Species - Peak Counts per hour											
Date	Observer	Start time	End time	BG	CU	OC	LB	BH	HG	CM	ET	BG droppings	Wind	Cloud	Precip	Vis	Dublin High Tide
24/11/2021	ED	10:30	11:30	0	0	0	0	2	3	0	0	N	3	3	1	5	14:25
24/11/2021	ED	11:30	12:30	0	0	0	0	2	2	0	0	N	3	3	1	5	14:25
24/11/2021	ED	12:30	13:30	0	0	0	0	0	5	0	0	N	3	3	1	5	14:25
24/11/2021	ED	13:30	14:30	0	0	0	0	0	5	0	0	N	3	3	1	5	14:25
24/11/2021	ED	14:30	15:30	0	0	0	0	2	2	0	0	N	3	3	1	5	14:25
24/11/2021	ED	15:30	16:30	0	0	0	0	1	3	0	0	N	3	3	1	5	14:25
08/12/2021	ED	09:55	10:55	0	0	0	0	8	12	4	0	N	7	3	3	5	14:18
08/12/2021	ED	10:55	11:55	0	0	0	0	11	12	5	0	N	7	3	3	5	14:18
08/12/2021	ED	11:55	12:55	0	0	0	0	7	4	0	0	N	7	3	3	5	14:18
08/12/2021	ED	12:55	13:55	0	0	0	0	5	8	0	1	N	7	3	3	5	14:18
08/12/2021	ED	13:55	14:55	0	0	0	0	2	6	0	0	N	7	3	3	5	14:18
08/12/2021	ED	14:55	15:55	0	0	0	0	3	51	0	0	N	7	3	3	5	14:18
22/12/2021	ED	09:40	10:40	0	0	0	0	6	3	0	0	N	4	3	2	5	13:24
22/12/2021	ED	10:40	11:40	0	0	0	0	2	0	0	0	N	4	3	2	5	13:24
22/12/2021	ED	11:40	12:40	0	0	0	0	0	4	0	0	N	4	3	2	5	13:24
22/12/2021	ED	12:40	13:40	0	0	0	0	5	2	0	0	N	4	3	2	5	13:24
22/12/2021	ED	13:40	14:40	0	0	0	0	9	3	0	0	N	4	3	2	5	13:24
22/12/2021	ED	14:40	15:40	0	0	0	0	7	31	0	0	N	4	3	2	5	13:24

British Trust for Ornithology Species Codes: BG-Brent Goose, CU-Curlew, OC-Oystercatcher, LB-Lesser Black-backed Gull, BH-Black-headed Gull, HG-Herring Gull, CM-Common Gull, ET-Little Egret.

Dundrum Survey - 2022						Species - Peak Counts per hour											
Date	Observer	Start time	End time	BG	CU	OC	LB	BH	HG	CM	ET	BG droppings	Wind	Cloud	Precip	Vis	Dublin High Tide
17/01/2022	ED	09:30	10:30	0	0	0	0	4	7	0	0	N	2	1	1	5	11:18
17/01/2022	ED	10:30	11:30	0	0	0	0	3	7	0	0	N	2	1	1	5	11:18
17/01/2022	ED	11:30	12:30	0	0	0	0	3	4	0	0	N	2	1	1	5	11:18
17/01/2022	ED	12:30	13:30	0	0	0	0	4	2	0	0	N	2	1	1	5	11:18
17/01/2022	ED	13:30	14:30	0	0	0	0	2	19	0	0	N	2	1	1	5	11:18
17/01/2022	ED	14:30	15:30	0	0	0	0	3	16	0	0	N	2	1	1	5	11:18
31/01/2022	ED	09:10	10:10	0	0	0	0	2	5	0	0	N	4	3	2	5	10:48
31/01/2022	ED	10:10	11:10	0	0	0	0	3	11	0	0	N	4	3	2	5	10:48
31/01/2022	ED	11:10	12:10	0	0	0	0	5	4	0	0	N	4	3	2	5	10:48
31/01/2022	ED	12:10	13:10	0	0	0	0	8	5	0	0	N	4	3	2	5	10:48
31/01/2022	ED	13:10	14:10	0	0	0	0	2	12	0	0	N	4	3	2	5	10:48
31/01/2022	ED	14:10	15:10	0	0	0	0	6	14	0	0	N	4	3	2	5	10:48

British Trust for Ornithology Species Codes: BG-Brent Goose, CU-Curlew, OC-Oystercatcher, LB-Lesser Black-backed Gull, BH-Black-headed Gull, HG-Herring Gull, CM-Common Gull, ET-Little Egret.

Dundrum Survey - 2022						Species - Peak Counts per hour											
Date	Observer	Start time	End time	BG	CU	OC	LB	BH	HG	CM	ET	BG droppings	Wind	Cloud	Precip	Vis	Dublin High Tide
15/02/2022	ED	09:10	10:10	0	0	0	0	0	7	0	0	N	3	3	1	5	11:18
15/02/2022	ED	10:10	11:10	0	0	0	0	0	3	0	0	N	3	3	1	5	11:18
15/02/2022	ED	11:10	12:10	0	0	0	0	0	0	0	0	N	3	3	1	5	11:18
15/02/2022	ED	12:10	13:10	0	0	0	0	1	5	0	0	N	3	3	1	5	11:18
15/02/2022	ED	13:10	14:10	0	0	0	0	3	9	0	0	N	3	3	1	5	11:18
15/02/2022	ED	14:10	15:10	0	0	0	0	5	13	0	0	N	3	3	1	5	11:18
28/02/2022	ED	08:50	09:50	0	0	0	0	3	17	0	0	N	3	4	2	5	09:50
28/02/2022	ED	09:50	10:50	0	0	0	0	0	6	0	0	N	3	4	2	5	09:50
28/02/2022	ED	10:50	11:50	0	0	0	0	0	14	0	0	N	3	4	2	5	09:50
28/02/2022	ED	11:50	12:50	0	0	0	0	4	22	0	0	N	3	4	1	5	09:50
28/02/2022	ED	12:50	13:50	0	0	0	0	7	36	0	0	N	3	4	1	5	09:50
28/02/2022	ED	13:50	14:50	0	0	0	0	6	29	0	0	N	3	4	2	5	09:50

British Trust for Ornithology Species Codes: BG-Brent Goose, CU-Curlew, OC-Oystercatcher, LB-Lesser Black-backed Gull, BH-Black-headed Gull, HG-Herring Gull, CM-Common Gull, ET-Little Egret.