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Natura Impact Statement- Information for a Stage 2 (Natura Impact Statement) AA for the proposed Large-scale Residential Development (LRD) at Fortfield Road, Terenure, Co. Dublin.

10th December 2024

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: 1 Celbridge West Land Limited

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Document Control Sheet			
Project	Natura Impact Statement- Information for a Stage 2 (Natura Impact Statement) AA for the proposed Large-scale Residential Development (LRD) at Fortfield Road, Terenure, Co. Dublin.		
Report	Natura Impact Statement		
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Introduction

The following Natura Impact Statement (NIS) has been prepared by **Altemar Ltd.** at the request of 1 Celbridge West Land Limited for the proposed Large-Scale Residential Development (LRD) at Fortfield Road, Terenure, Dublin 6W.

An Appropriate Assessment is an assessment as to whether or not a plan or project would adversely affect the integrity of a European Site. European sites are those sites designated as Special Areas of Conservation (SAC) or Special Protection Areas (SPA). An AA Screening was carried out for the proposed project and concluded that:

'Acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on these European sites because it cannot be excluded on the basis of best objective scientific information following screening, in the absence 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 because any likely significant effect 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.'

This Natura Impact Statement examines whether the 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, the managing director of Altemar, is an Environmental Scientist and Marine Biologist with 30 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. He is currently contracted to Inland Fisheries Ireland as the sole "External Expert" to environmentally assess internal and external projects. He is also chair of an internal IFI working group on environmental assessment. 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).

Background to the Appropriate Assessment

The Habitats Directive 92/43/EEC (together with the Birds Directive (2009/147/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 Natura 2000 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 2019)[1]:

"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 Natura 2000 site is designated.

In its Waddenzee ruling (C-127/02 paragraphs 52–54, 59) the Court emphasized the importance of using the best scientific knowledge when carrying out the appropriate assessment in order to enable the competent authorities to conclude with certainty that there will be no adverse effects on the site's integrity:

'As regards the concept of 'appropriate assessment' within the meaning of Article 6(3) of the Habitats Directive, it must be pointed out that the provision does not define any particular method for carrying out such an assessment. None the less, according to the wording of that provision, an appropriate assessment of the implications for the site concerned of the plan or project 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.'

'Such an assessment therefore implies that all the aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those (conservation) objectives must be identified in the light of the best scientific knowledge in the field.'

'The competent national authorities, taking account of the appropriate assessment of the implications of the plan or project for the site concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects.'

Assessments that confine themselves to general descriptions and a superficial review of existing data on 'nature' within the area cannot therefore be considered as 'appropriate' for the purposes of Article 6(3). According to the Court the appropriate assessment should contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the site concerned (C-304/05 paragraph 69)53. It cannot be held that an assessment is appropriate where information and reliable updated data concerning the habitats and species in the site are lacking (C-43/10 paragraph 115).

It is at the time of adoption of the decision authorising implementation of the project that there must be no reasonable scientific doubt remaining as to the absence of adverse effects on the integrity of the site in question (C-239/04, paragraph 24). Furthermore, as regards multi-phase monitoring, such monitoring cannot be considered as sufficient to ensure performance of the obligation laid down in Article 6(3) of the Habitats Directive (C-142/16, paragraph 43).

It follows from the above that the appropriate assessment should be reasoned and recorded. If the record of the assessment does not disclose the reasoned basis for the subsequent decision (i.e. if the record is a simple unreasoned positive or negative view of a plan or project), the assessment does not fulfil its purpose and cannot be considered 'appropriate'.

Finally, timing is also important. The assessment is a step preceding and providing a basis for the other steps – in particular, an approval or refusal of a plan or project. The assessment must therefore be undertaken before the competent authority decides whether or not to undertake or authorise the plan or project (C-127/02

[1] https://op.europa.eu/o/opportal-service/download-handler?identifier=11e4ee91-2a8a-11e9-8d04-01aa75ed71a1&format=pdf&language=en&productionSystem=cellar&part=

paragraph 42). Of course, where a plan or project undergoes re-design before a decision is taken on it, it is quite in order to revise the assessment as part of an iterative process. However, it should not be open to authorities to add retrospectively to an assessment once the subsequent step in the sequence of steps set out in Article 6(3) and 6(4) has been taken."

Stages of the Appropriate Assessment ("AA")

The Appropriate Assessment screening report, dated 10th December 2024, 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' (Revised 11 February 2010) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). This AA screening report was prepared by to provide the competent authority (the planning authority of Dublin City Council) with information necessary to meet their obligation of carrying out AA screening, to determine whether AA is required. 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
    - 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 and screening determination
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 integrity of 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 and AA determination

If it can be demonstrated during the AA screening phase (Stage 1), that the possibility of likely significant effect, of the project, can be excluded, 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 has been 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. That position is now subject to the decision of the CJEU in *Eco Advocacy* C-721/21where it was held that the AA Screening should take account of " *all the constituent elements of that project[development] inherent in it which have the effect of reducing the harmful effects of the project on the [EU] site concerned*" where such elements are

incorporated into the design of a project, not with the aim of reducing the negative effects of that project on the site concerned, but as "*standard features required for all projects of the same type*".

Description of the Proposed Project

The development will comprise a Large-Scale Residential Development (LRD) on a site at Fortfield Road, Terenure of 284 no. units delivering 19 no. houses and 265 no. apartments made up of studios; 1 beds; 2 beds; 3 beds; and 4 beds. The development will also provide community, cultural and arts space and a creche. Communal internal space for residents will also be delivered. Provision of car, cycle and motorbike parking will be provided throughout the development, including at basement and surface level. Vehicular/pedestrian/cyclist access from Fortfield Road. Proposed upgrade works to the surrounding road network is also included. All associated site development works, open space, services provision, ESB substations, plant areas, waste management areas, landscaping (both public and communal) and boundary treatments.

The proposed site outline, location, site plan and elevations are demonstrated in Figures 1-4.

Landscape

The landscape strategy for the proposed development has been prepared by NMP Landscape Architects to accompany this planning application. The proposed landscape plans are demonstrated in Figure 5-10.

Figure 1. Site location

Figure 2. Site outline

Figure 3. Overall site plan

Figure 4. Proposed contiguous elevations

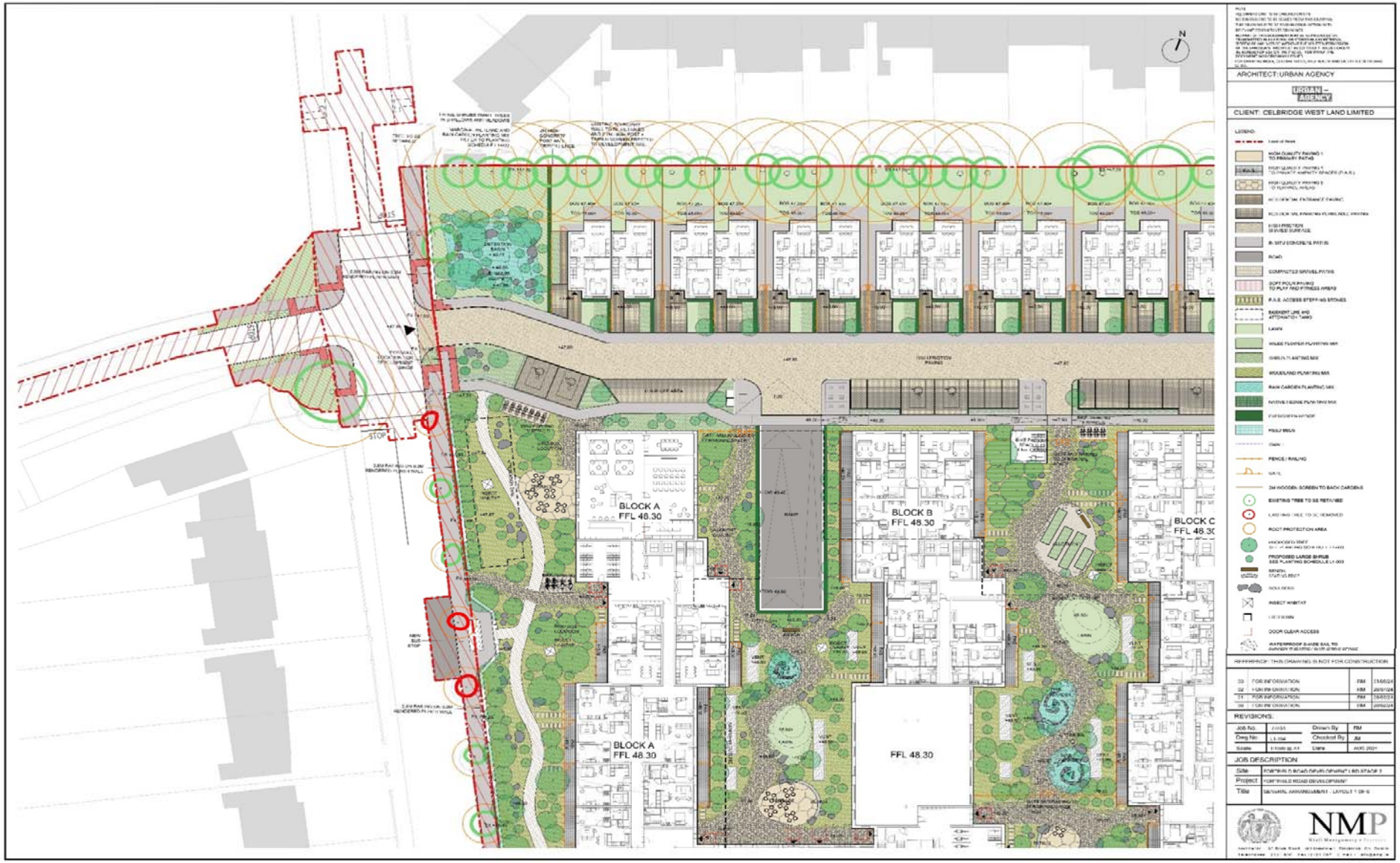


Figure 5- Landscape General Arrangements Plan (Sheet 1 of 6)

Figure 6- Landscape General Arrangements Plan (Sheet 2 of 6)

Figure 7- Landscape General Arrangements Plan (Sheet 3 of 6)

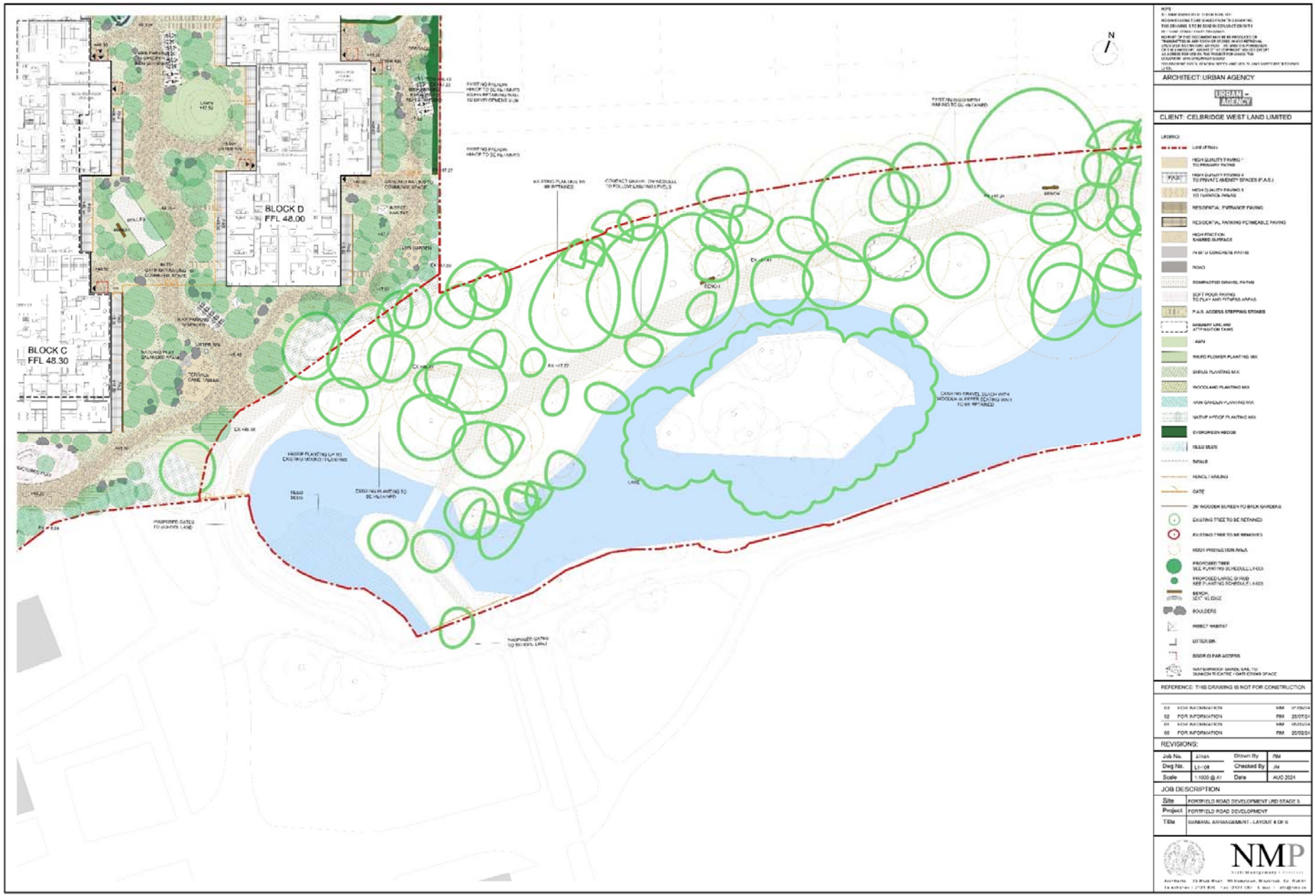


Figure 8- Landscape General Arrangements Plan (Sheet 4 of 6)

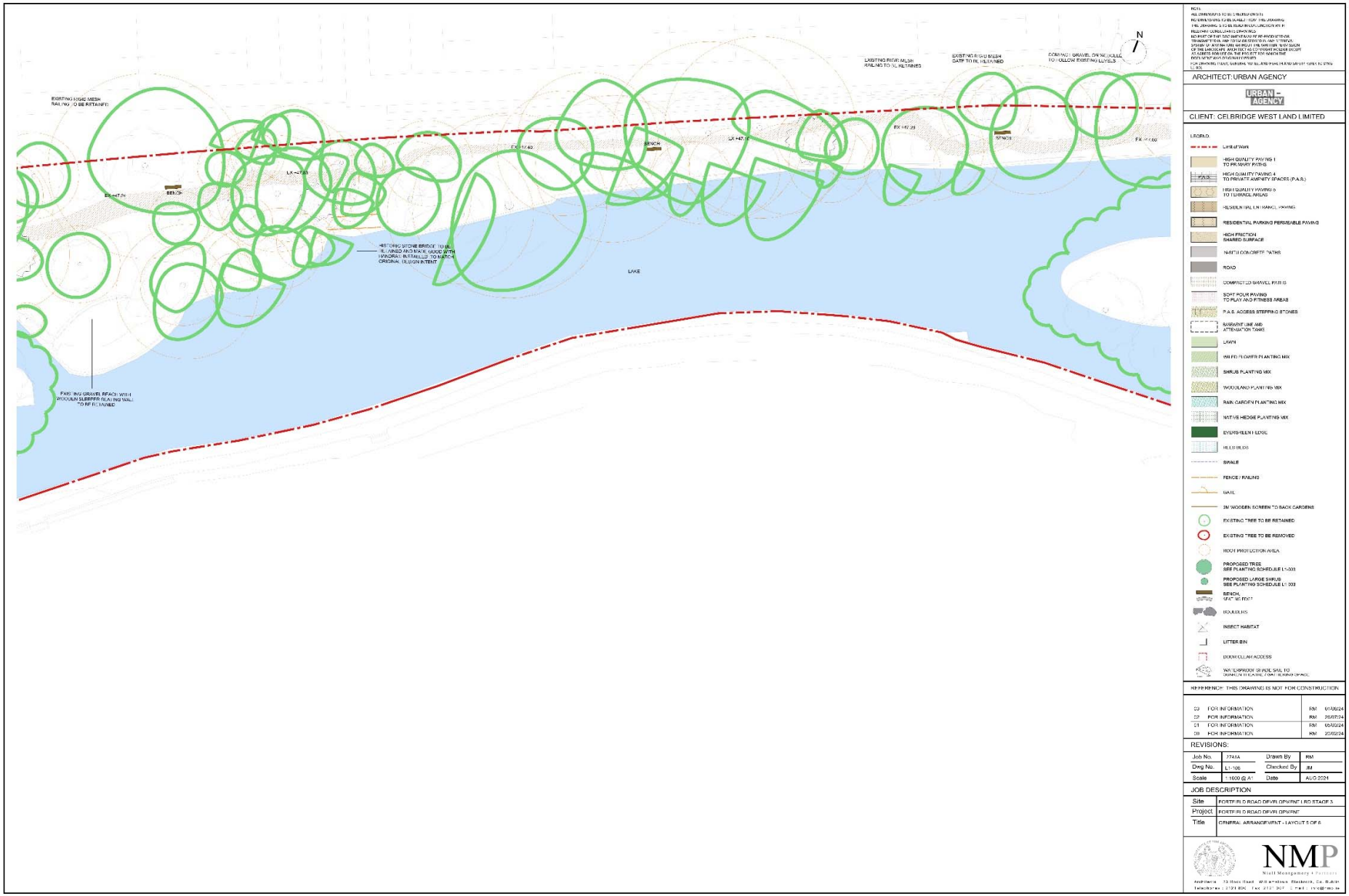


Figure 9- Landscape General Arrangements Plan (Sheet 5 of 6)

Figure 10- Landscape General Arrangements Plan (Sheet 6 of 6)

Drainage

A Civil and Structural Engineering Services Report has been prepared by Punch Consulting Engineers to accompany this planning application. This report outlines the following drainage strategy for the proposed development:

Existing Surface Water Drainage System

'Based on available records, the following stormwater drainage exists adjacent to the development site:

1. 300mm concrete stormwater sewer flowing south to north along Fortfield Road. This increases to 450mm on approach to the Greenlea Road junction.

2. There is an existing lake located at the site's south-eastern boundary adjacent to Terenure College Rugby Club. According to the drainage records the pond is fed from an existing offtake on the River Poddle, known as Lakelands Overflow, which is located at Wainsfort Manor to the west of the subject site. The overflow is piped underground via a 1230mm x 1230mm concrete box culvert for a distance of 1.4km before discharging into the pond. The pond discharges to the River Dodder located to the southeast of the subject site via a 1450mm x 1480mm concrete box culvert.'

Proposed Surface Water Drainage System

''The proposed surface water drainage system has been designed using Causeway Flow software in accordance with the Department of Environment and Local Government's guidance document "Recommendations for Site Development Works for Housing Areas", with guidance taken from the "Greater Dublin Strategic Drainage Study" (GDSDS) and the Dublin City Development Plan.

The model will analyse a range of storms at the 1% AEP (1 in 100-year return period storm), with a 20% additional rainfall to allow for climate change.

The network will be modelled with the proposed attenuation tank volumes and associated hydrobrake flow control outlets included.

Depths of water in the network model (including pipework, manholes, the attenuation tanks and hydrobrakes) have been assessed for surcharging and flood risk. The model is established such that a flood risk is identified in the simulation results if the water rises to within 300mm of the cover level. If the water level rises to a level below this, it is identified as a surcharge within the model results. It is important to note that this warning is given related to proposed ground level at the node and not related to Finished Floor level. All proposed drainage is within roadways, and the adjacent Floor levels will be higher than the road level at that location. The maximum water level in the attenuation tanks is more than 500mm below the Finished Floor level of the adjacent property. This aligns with Criterion 3 of the GDSDS.

Causeway includes a design setting called "additional storage". This is included in the software to account for storage volume in the network provided by secondary drainage including access junctions, inspection chambers, service connections etc. This provides additional storage in the network above the storage provided within the attenuation tank and primary drainage network. 20m3/ha is the standard allowance provided for in Causeway Flow and was utilised for this design.''

In relation to Sustainable Urban Drainage Systems (SuDS) the report states that:

''The proposed development has been assessed in relation to Sustainable Urban Drainage Systems (SuDS). A variety of SuDS measures have been proposed to comply with Council recommendations. All SuDS measures are to be implemented with reference to the UK SuDS Manual and Dublin City Council drainage requirements.

Relatively small volumes of rainwater collected on the respective SuDS systems will enter the public sewer network during typical low intensity storms. This is because the proposed SuDS measures will retain rainwater until it is either used via evapotranspiration in the green areas or infiltrated to the ground.

The SuDS processes decrease the impact of the development on the receiving environment by providing amenity and biodiversity in many cases. Regular maintenance of the SuDS proposals is required to ensure they are operating to their optimal level throughout their design life.''

Proposed Foul Water Network

''Available records show the following foul water drainage infrastructure exists adjacent to the development site:

1. 225mm vitrified clay foul sewer flowing south to north along Fortfield Road. This sewer increases in size to a 300mm foul sewer and splits into two lines at the junction of Fortfield Road and Greenlea Road.
2. 375mm concrete combined sewer flows west-east along Greenlea Road.
The proposed foul water sewers have been designed using Causeway Flow software in accordance with Irish Water's Code of Practice for Wastewater Infrastructure and the DOE's Recommendations for Site Development Works for Housing Areas. The foul loading has been calculated in accordance with the Code of Practice for Wastewater Infrastructure (particularly Section 3.6, Appendix C and Appendix D) published by Irish Water.
It is proposed that the foul sewer will discharge by gravity to the sewer on Fortfield Road. All foul water drainage shall be designed in accordance with Irish Water's Wastewater Code of Practice and Standard Details.
To ensure the proposed foul drainage can connect to the existing foul sewer on Fortfield Road, and to ensure pipe gradients are provided in accordance with Irish Water's Wastewater Code of Practice, the proposed site levels have been raised to achieve adequate cover, with a concrete surround proposed to pipes where adequate cover as per Irish Water's Wastewater Code of Practice cannot be achieved.
The construction phase of the proposed development is estimated to have a duration of 36 months. Therefore, the timeline for connection to the public foul drainage system will be approx. 34-36 months after commencement of construction on site.
Irish Water have confirmed via the Pre-Connection Enquiry process that the development can be supported by the public foul water network.''
A Site-Specific Flood Risk Assessment has been prepared by PUNCH Consulting Engineers. In conclusion, the report states that:

'PUNCH Consulting Engineers were appointed to carry out a Site-Specific Flood Risk Assessment (SSFRA) for a proposed development at Fortfield Road, Terenure, Dublin 6W. This SSFRA report evaluates the potential flood risks to the site, ensuring that the development proposals are safe, sustainable, and resilient to flooding. The following document forms part of the planning application to be submitted to Dublin City Council and should be reviewed alongside the planning drawings prepared by Urban Agency Architects.

A flood risk identification exercise was undertaken for the development site as part of this SSFRA which revealed that the pond within the site has not been included in the Catchment Flood Risk Assessment and Management Study (CFRAMS) for the area. Additionally, a review of the Dublin City Development Plan (DP) 2022-2028 Strategic Flood Risk Assessment (SFRA) mapping showed the site to be partially located within Flood Zones A and B.

To adequately assess the flood risk from the pond within the site, a 1D hydraulic model of the water-feature was developed and analysed. The results of the hydraulic modelling indicate that flood waters from the 1%AEP and 0.1%AEP events are retained within the contoured lands around the pond and do not pose a flood risk to the proposed development.

To further investigate the flooding shown on the Dublin City DP SFRA mapping, PUNCH consulted Dublin City Council (DCC) and Nicholas O'Dwyer, their appointed engineers for the Poddle Flood Alleviation Scheme, and confirmed that the flooding is pluvial in nature. Section 2.24 of the OPW's "The Planning System and Flood Risk Management Guidelines" states that "..flood zones are determined on the basis of the probability of river and coastal flooding only..". This point is echoed in Section 1.4.1 of the Dublin DP 2022-2028 SFRA report. As pluvial flooding should not be used in the designation of flood zones, and in the absence of any identifiable fluvial or coastal flood risk to the site, it is concluded that the proposed development site is wholly located in Flood Zone C.

To alleviate concerns relating to pluvial flooding at the site, the associated pluvial flow paths and flood volumes were examined. A proposal has been developed, in direct consultation with DCC, to address the pluvial flooding on Fortfield Road, which includes the provision of a detention basin within the proposed development site boundary. These flood alleviation measures will also remove pluvial flooding from a section of Fortfield Road for storm events up to and including the 1%AEP event, offering a significant reduction in

pluvial flood risk to that area over existing conditions. A further exercise was carried out which confirmed that there is sufficient storage available within the site to ensure that the development will not flood even in the extreme 0.1%AEP pluvial event. The redevelopment of the site will not adversely affect pluvial flood levels or extents in the area.

To mitigate against fluvial flood risk to the site, the Finished Floor Levels (FFL) of the ground floor of the proposed buildings will be set at or above 48.0mOD. This level equates to the 0.1%AEP fluvial flood level including a 20% allowance for climate change and 300mm freeboard. The proposed basement will be isolated from the flood zone and the entrance will be set at a level at or above 48.0mOD.

It is asserted that the proposed development site is wholly located in Flood Zone C and therefore a Justification Test is not strictly required as part of this SSFRA report. However, given that the site is shown within Flood Zones A and B on the DP SFRA mapping it was deemed prudent to complete the Justification Test.

The mitigation measures proposed in this SSFRA will ensure that the development is in compliance with the relevant sections of the Dublin City DP as well as in full compliance with the Dublin City DP SFRA and OPW's The Planning System & Flood Risk Management Guidelines."[2]

[2] The reference to mitigation measures here were not considered as part of the screening and this is a direct quote directly from the Flood Assessment.

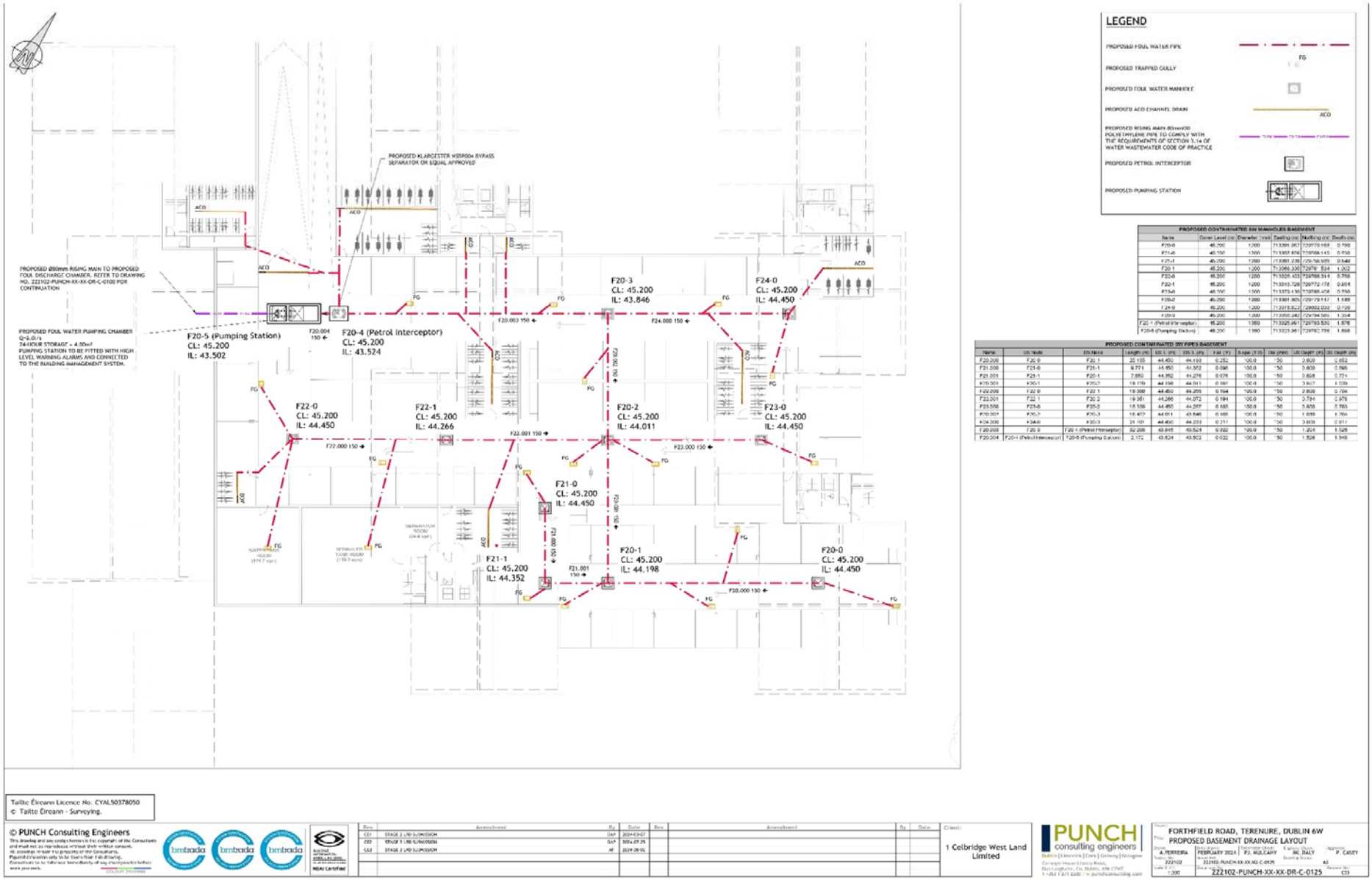


Figure 11. Proposed basement drainage layout

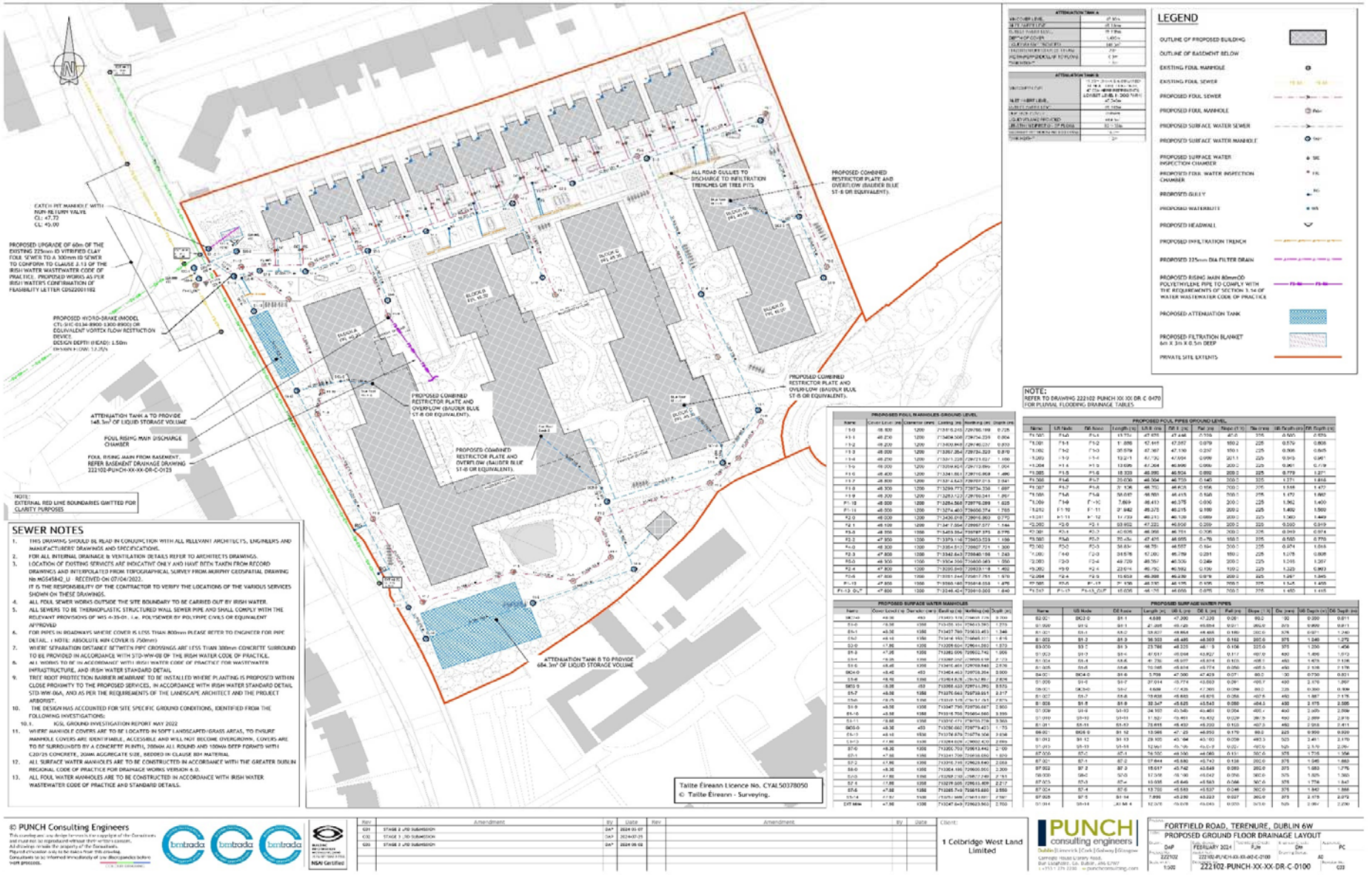


Figure 12. Proposed ground floor drainage layout

Identification of Relevant Natura 2000 Sites

The following section identifies the relevant European sites, with the Zone of Influence of the proposed project and compiles information on their qualifying interests and conservation objectives in addition to outlining the potential for significant effects on each site. The proposed development site is not located within a European site. As outlined in Office of the Planning Regulator (2021)[3] "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km)*."

The proposed development site is located in a built up, urban area. The nearest European site is South Dublin Bay and River Tolka Estuary SPA approximately 5.8 km from the proposed development site. The nearest SAC is South Dublin Bay SAC approximately 5.9 km from the proposed development site. There is a direct hydrological connection (Figures 12 & 13) from the subject site to the aforementioned Natura 2000 sites via the proposed surface water drainage strategy. The existing hydrological environment is characterised primarily by the presence of an open drainage pond located on the site. According to the drainage records the pond is fed from an existing off-take on the River Poddle, known as Lakelands Overflow, which is located at Wainsfort Manor to the west of the subject site. The overflow is piped underground via a 1230mm x 1230mm concrete box culvert for 1.4km before discharging into the pond. The pond discharges to the River Dodder (via its tributary, the River Slang) located to the southeast of the subject site.

As the River Dodder (which outfalls to the River Liffey) flows into Dublin Bay, there is a direct hydrological connection to Natura 2000 sites located along this pathway. 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. These measures are outlined in Table 14.

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 foul sewerage system. Foul wastewater will then outfall to Ringsend Wastewater Treatment Plant (WwTP) for treatment.

A key factor in the consideration as to whether or not a particular European site is likely to be affected by the proposed works is its distance from the location of the works. It is generally, but not necessarily, the case that the greater the distance from the plan or project the smaller the likelihood of potential impacts. In this case, the nearest European site to the proposed development is 5.8 km away (South Dublin Bay & River Tolka SPA) (Figure 14). Best practice guidance suggests that an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995) However, it should be noted that the ZOI was extended to 15 km from the project site boundary where a hydrological connection was identified, whether by drainage connections or natural biodiversity corridors e.g. rivers or woodland, to account for that hydrological connection to potential European Sites. In the absence of any such direct or indirect connections the receiving environment within 2km of the project site was considered.

All Natura 2000 sites within 15km are listed in Table 1. The conservation objectives, qualifying interests, and the potential impact of the development on each European site and qualifying interest screened in are outlined in Table 2. There is no direct or indirect hydrological pathway from the proposed development site to the Natura 2000 sites beyond 15km and no significant effect is foreseen on these sites.

[3] https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf

Table 1. Proximity to designated sites of conservation importance

Site Code	NATURA 2000 Site	Distance
Special Areas of Conservation		
IE000210	South Dublin Bay SAC	5.9 km
IE001209	Glenasmole Valley SAC	6.9 km
IE002122	Wicklow Mountains SAC	7.9 km
IE000206	North Dublin Bay SAC	9.6 km
IE000725	Knocksink Wood SAC	11.6 km
IE003000	Rockabill to Dalkey Island SAC	13.6 km
IE000713	Ballyman Glen SAC	13.8 km
IE001398	Rye Water Valley/ Carton SAC	14.0 km
IE000199	Baldoyle Bay SAC	14.8 km
IE000202	Howth Head SAC	14.9 km
IE0004024	South Dublin Bay and River Tolka Estuary SPA	5.8 km
IE0004040	Wicklow Mountains SPA	7.6 km
IE0004006	North Bull Island SPA	8.0 km
IE004236	North-West Irish Sea SPA	10.4 km
IE0004172	Dalkey Islands SPA	13.4 km
IE0004016	Baldoyle Bay SPA	14.8 km

Table 2. Natura 2000 sites Screened IN

Natura Code	Name	Screened In/Out	Details/Reason
Special Areas of Conservation			
IE0000210	South Dublin Bay SAC	**IN**	**Conservation Objectives**[4] 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 5.9 km from the South Dublin Bay SAC (Figure 13). 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 Dodder (via its tributary, the River Slang) that outfalls to the River Liffey and ultimately the marine environment at 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 this Natura 2000 site. 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 foul sewer network that outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works under licence. 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 there is the potential for significant effects on the South Dublin Bay SAC in the absence of mitigation measures. This is as a result of the direct hydrological connection from the subject site to this SAC via surface water drainage. For this reason, it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives. **Potential for significant effects - Natura Impact Statement Required**
IE0000206	North Dublin Bay SAC	**IN**	**Conservation Objectives**

[4] Further Detailed Site specific Conservation Objectives are outlined below within the NIS

Natura Code	Name	Screened In/Out	Details/Reason
			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 development site is located within a suburban area 9.6 km from the North Dublin Bay SAC (Figure 13). 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 Dodder (via its tributary, the River Slang) that outfalls to the River Liffey and ultimately the marine environment at 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 this Natura 2000 site. 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 foul sewer network that outfalls to Ringsend WwTP for treatment. Foul wastewater from the proposed development will be processed in the existing Ringsend Treatment works under licence. 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 there is the potential for significant effects on the North Dublin Bay SAC in the absence of mitigation measures. This is as a result of the direct hydrological connection from the subject site to this SAC via surface water drainage. For this reason, it is necessary to proceed to a NIS on the effects of the project on this site in view of its conservation objectives. **Potential for significant effects - Natura Impact Statement Required**
Special Protection Areas			

Natura Code	Name	Screened In/Out	Details/Reason
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. **Special Conservation 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 5.8 km from the South Dublin Bay and River Tolka Estuary SPA. 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 Dodder (via its tributary, the River Slang) that outfalls to the River Liffey Estuary and ultimately the marine environment at 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 foul sewer network that 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 the 2023-2024 Wintering Bird Survey Report (Appendix I) - *'Between November 2023 and March 2024, 9 Winter Bird Surveys were undertaken at grounds at Terenure College, South County Dublin. The survey site itself (1) at the northwest corner of the survey area of Terenure College is part of the playing field areas and is bordered by trees at its outer boundaries. Dividing the survey site area and*

Natura Code	Name	Screened In/Out	Details/Reason
			Terenure Rugby Club to the east is an artificial pitch area. Significant adjacent sites of interest to the survey area are VEC Football club immediately to the east and Bushy Park to the south of the survey area. The survey area playing field areas were checked on all surveys specifically for evidence of Brent Goose scat, these being an excellent indicator of any visitations on-site by the species. *Similar again to the recording season 2022-2023 Brent Geese were not observed foraging in the Terenure College survey area, and no geese scat was found on-site, from experience surveying other sites it would appear between the high volume of public footfall on the site, combined with the very regular recreational use of the pitches, negates the visitation of Geese to the site. During surveys birds were noted passing over the site (all over the primary survey site -area 1, these birds are likely moving between outlying sites, including VEC FC). Results suggest that the site is not significant ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's).'* The subject site is open to the public and is regularly disturbed with walkers, joggers and dogs (off lead). Brent Geese or wader species were not noted on the subject site during site assessments and levels of gulls on site were well below the 1% of National Numbers. In addition, discussions with birders living nearby concluded (albeit anecdotal information) that such species have not being seen within the college in recent years. The wintering bird assessments indicate that the site is not significant ex-situ foraging or roosting site for any species of qualifying interest from nearby SPA's. As a result, it is considered that there would be no likely significant effects on these species due the loss of the grassland area of the site. However, due to the direct pathway from the construction works and the requirement to implement mitigation measures to prevent downstream impacts on European sites a NIS is required. Noise disturbances from the development would be localised to the immediate environs of the site and would not have a significant impact on the features of interest of this 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 from the subject site to this SPA via surface water drainage. Mitigation measures are required. 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**

Natura Code	Name	Screened In/Out	Details/Reason
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. **Features of Interest** 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 a*rquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999] **Potential Impact** The proposed development is located 8.0 km from North Bull Island SPA (Figure 15). There is direct hydrological pathway from the proposed development to this SPA via surface water drainage network. Surface water from the development will discharge to the onsite pond which discharges to the River Dodder (via its tributary, the River Slang) and ultimately the River Liffey and the marine environment at Dublin Bay. In the absence of mitigation measures, it is considered significant effects on the conservation objectives of this SPA are likely as a result of the direct hydrological pathway. There is an indirect hydrological connection to this SPA via foul wastewater drainage. Foul water from the proposed development will be discharged via a new connection to the existing foul sewer network. However, given the distance (8.0 km) via the indirect pathway and that the foul water will be treated under licence before being discharged to the Liffey Estuary at Ringsend, any silt laden run off, pollutants or dust would be diluted or dispersed and will not result in significant effects on this SPA. As outlined in the 2023-2024 Wintering Bird Survey Report (Appendix I) -

Natura Code	Name	Screened In/Out	Details/Reason
			'Between November 2023 and March 2024, 9 Winter Bird Surveys were undertaken at grounds at Terenure College, South County Dublin. The survey site itself (1) at the northwest corner of the survey area of Terenure College is part of the playing field areas and is bordered by trees at its outer boundaries. Dividing the survey site area and Terenure Rugby Club to the east is an artificial pitch area. Significant adjacent sites of interest to the survey area are VEC Football club immediately to the east and Bushy Park to the south of the survey area. The survey area playing field areas were checked on all surveys specifically for evidence of Brent Goose scat, these being an excellent indicator of any visitations on-site by the species. *Similar again to the recording season 2022-2023, Brent Geese were not observed foraging in the Terenure College survey area, and no geese scat was found on-site, from experience surveying other sites it would appear between the high volume of public footfall on the site, combined with the very regular recreational use of the pitches, negates the visitation of Geese to the site. During surveys birds were noted passing over the site (all over the primary survey site -area 1, these birds are likely moving between outlying sites, including VEC FC). Results suggest that the site is not significant ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's).'* The subject site is open to the public and is regularly disturbed with walkers, joggers and dogs (off lead). Brent Geese or wader species were not noted on the subject site during site assessments and levels of gulls on site were well below the 1% of National Numbers. In addition, discussions with birders living nearby concluded (albeit anecdotal information) that such species have not being seen within the college in recent years. The wintering bird assessment suggests that the site is not significant ex-situ foraging or roosting site for any species of qualifying interest from nearby SPA's. As a result, it is considered that there would be no likely significant effects on these species due the loss of the grassland area of the site. However, due to the direct pathway from the construction works and the requirement to implement mitigation measures to prevent downstream impacts on European sites a NIS is required. Noise disturbances from the development would be localised to the immediate environs of the site and would not have a significant impact on the features of interest of this site. 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. **A Natura Impact Statement is required for this site.**
IE004236	North-West Irish Sea SPA	**IN**	**Conservation Objectives** The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall

Natura Code	Name	Screened In/Out	Details/Reason
			maintenance of favourable conservation status of those habitats and species at a national level. **Special Conservation Interests** Red-throated Diver *(Gavia stellata)* [A001] Great Northern Diver *(Gavia immer)* [A003] Fulmar *(Fulmarus glacialis)* [A009] Manx Shearwater *(Puffinus puffinus)* [A013] Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis)* [A018] Common Scoter (*Melanitta nigra)* [A065] Little Gull *(Larus minutus)* [A177] Black-headed Gull (*Chroicocephalus ridibundus)* [A179] Common Gull *(Larus canus)* [A182] Lesser Black-backed Gull *(Larus fuscus)* [A183] Herring Gull *(Larus argentatus)* [A184] Great Black-backed Gull *(Larus marinus)* [A187] Kittiwake *(Rissa tridactyla)* [A188] Roseate Tern *(Sterna dougallii)* [A192] Common Tern (*Sterna hirundo)* [A193] Arctic Tern (*Sterna paradisaea)* [A194] Little Tern (*Sterna albifrons)* [A195] Guillemot *(Uria aalge)* [A199] Razorbill *(Alca torda) [A200*] Puffin (*Fratercula arctica*) [A204] **Potential Impact** The development site is located within a suburban area 7.7 km from the North-West Irish Sea SPA (Figure 14). There is direct hydrological pathway from the proposed development to this SPA via surface water drainage network. Surface water from the development will discharge to the onsite pond which discharges to the River Dodder (via its tributary, the River Slang) and ultimately the River Liffey and the marine environment at Dublin Bay. In the absence of mitigation measures, it is considered significant effects on the conservation objectives of this SPA are likely as a result of the direct hydrological pathway. There is an indirect hydrological connection to this SPA via foul wastewater drainage. Foul water from the proposed development will be discharged via a new connection to the existing foul sewer network. However, given the distance (7.7 km) via the indirect pathway and that the foul water will be treated under licence before being discharged to the Liffey Estuary at Ringsend, any silt laden run off, pollutants or dust would be diluted or dispersed and will not result in significant effects on this SPA. As outlined in the 2023-2024 Wintering Bird Survey Report (Appendix I) -

Natura Code	Name	Screened In/Out	Details/Reason
			'Between November 2023 and March 2024, 9 Winter Bird Surveys were undertaken at grounds at Terenure College, South County Dublin. The survey site itself (1) at the northwest corner of the survey area of Terenure College is part of the playing field areas and is bordered by trees at its outer boundaries. Dividing the survey site area and Terenure Rugby Club to the east is an artificial pitch area. Significant adjacent sites of interest to the survey area are VEC Football club immediately to the east and Bushy Park to the south of the survey area. The survey area playing field areas were checked on all surveys specifically for evidence of Brent Goose scat, these being an excellent indicator of any visitations on-site by the species. *Similar again to the recording season 2022-2023, Brent Geese were not observed foraging in the Terenure College survey area, and no geese scat was found on-site, from experience surveying other sites it would appear between the high volume of public footfall on the site, combined with the very regular recreational use of the pitches, negates the visitation of Geese to the site. During surveys birds were noted passing over the site (all over the primary survey site -area 1, these birds are likely moving between outlying sites, including VEC FC). Results suggest that the site is not significant ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's).'* Noise disturbances from the development would be localised to the immediate environs of the site and would not have a significant impact on the features of interest of this site. The subject site is open to the public and is regularly disturbed with walkers, joggers and dogs (off lead). Brent Geese or wader species were not noted on the subject site during site assessments and levels of gulls on site were well below the 1% of National Numbers. In addition, discussions with birders living nearby concluded (albeit anecdotal information) that such species have not being seen within the college in recent years. The wintering bird assessment suggests that the site is not significant ex-situ foraging or roosting site for any species of qualifying interest from nearby SPA's. As a result, it is considered that there would be no likely significant effects on these species due the loss of the grassland area of the site. However, due to the direct pathway from the construction works and the requirement to implement mitigation measures to prevent downstream impacts on European sites a NIS is required. 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. **A Natura Impact Statement is required for this site.**

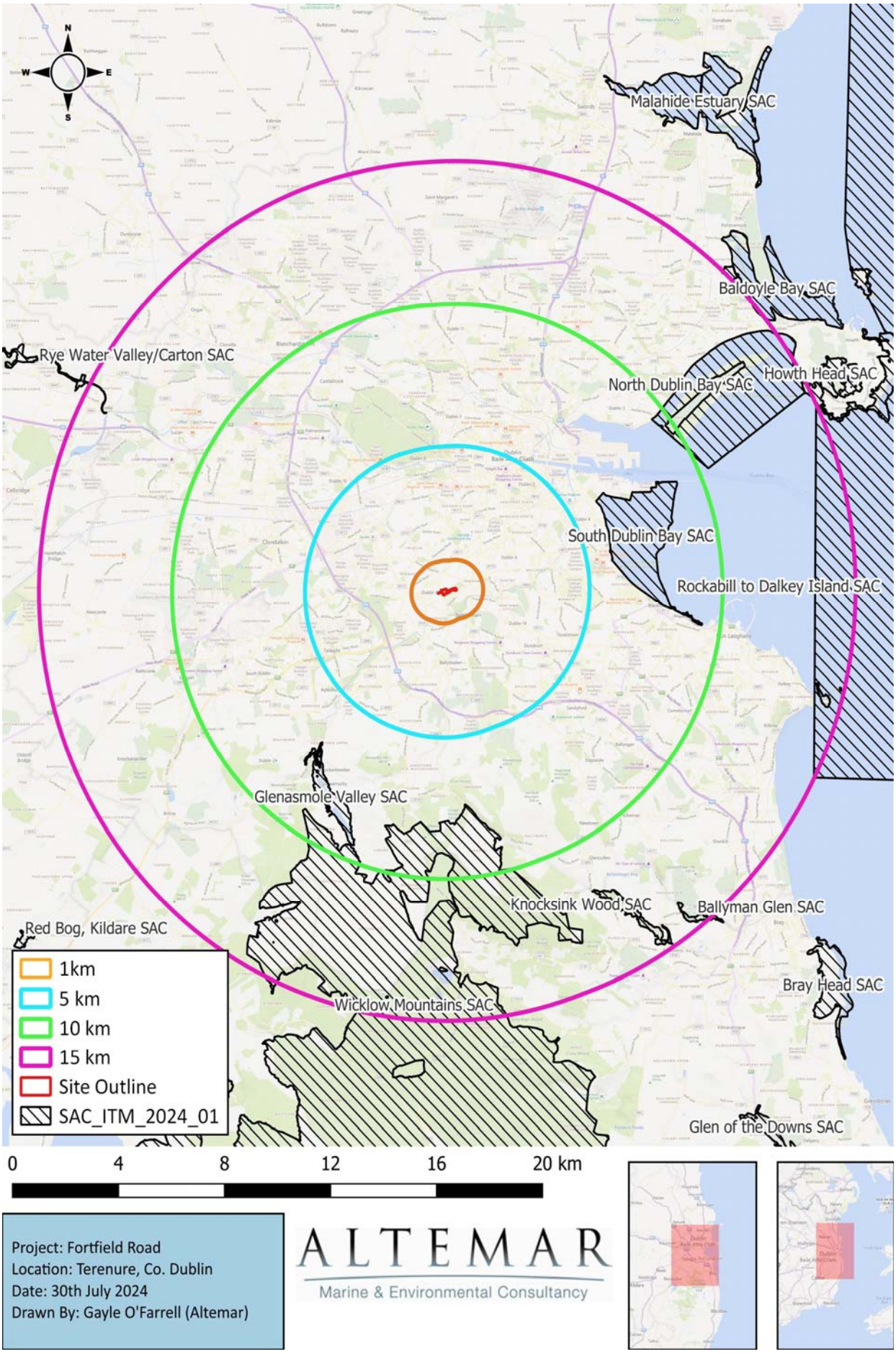


Figure 13. SACs within 15km of the proposed development

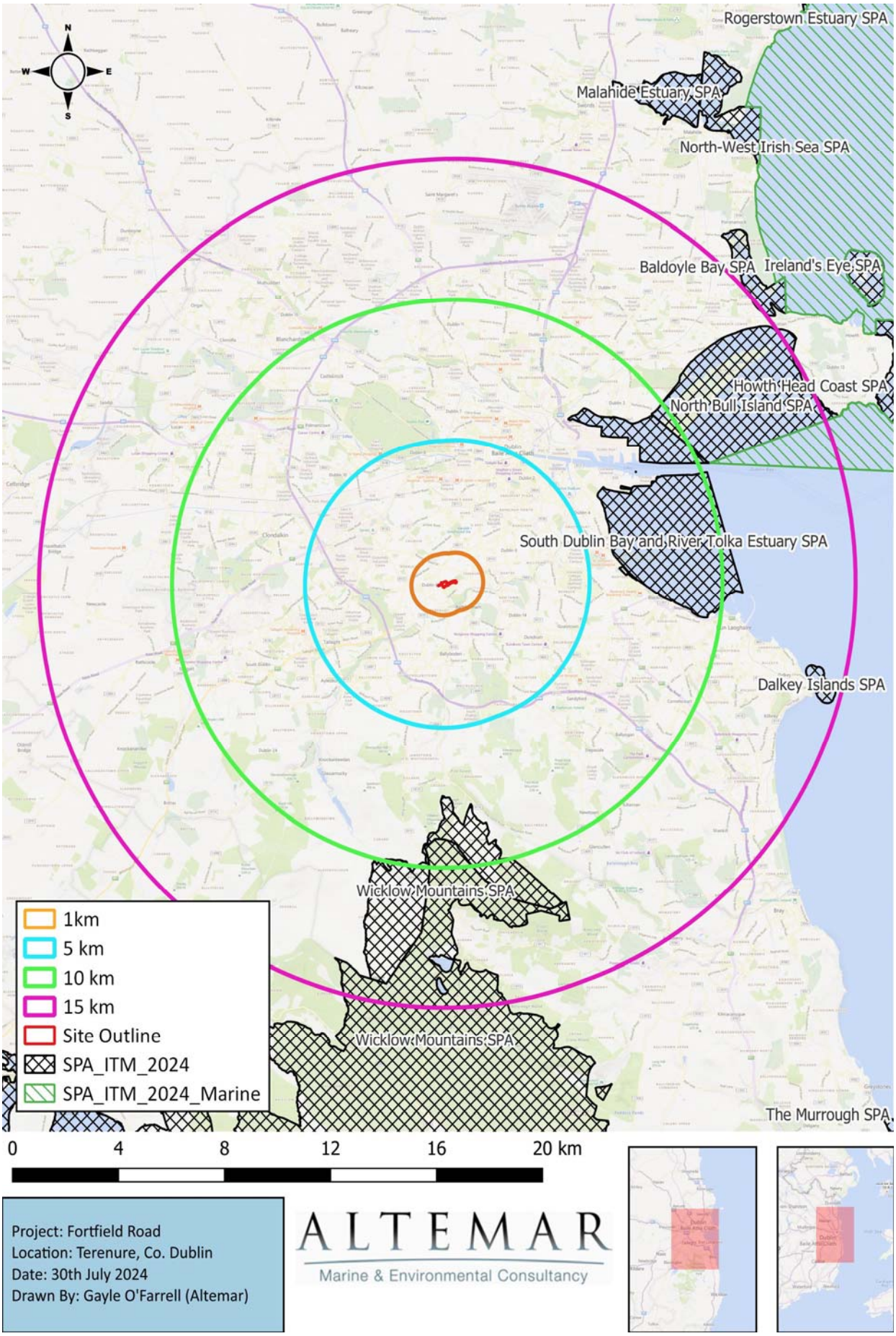


Figure 14. SPAs within 15km of the proposed development

Figure 15. Watercourses proximate to proposed development

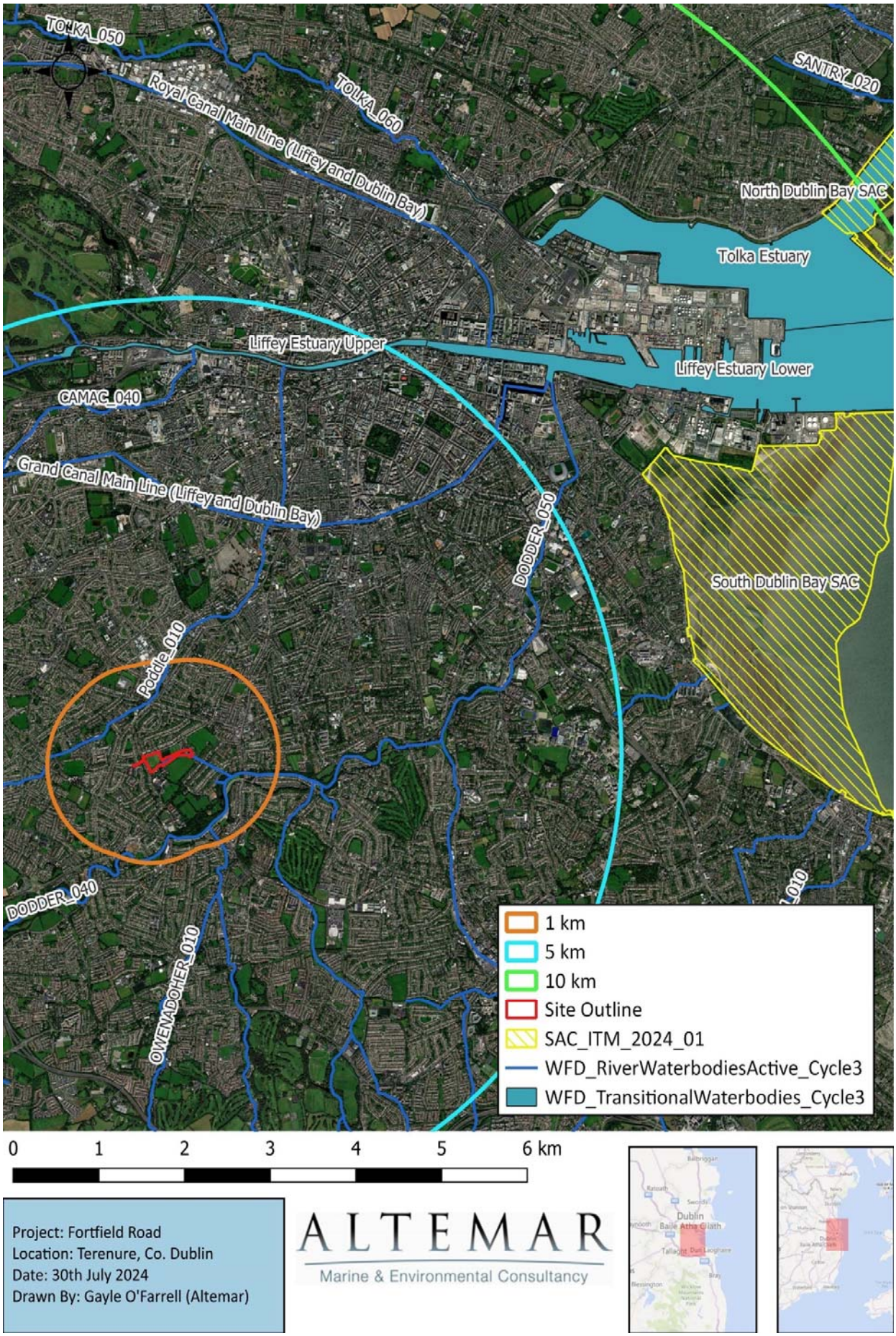


Figure 16. Watercourses and SACs proximate of the proposed development site

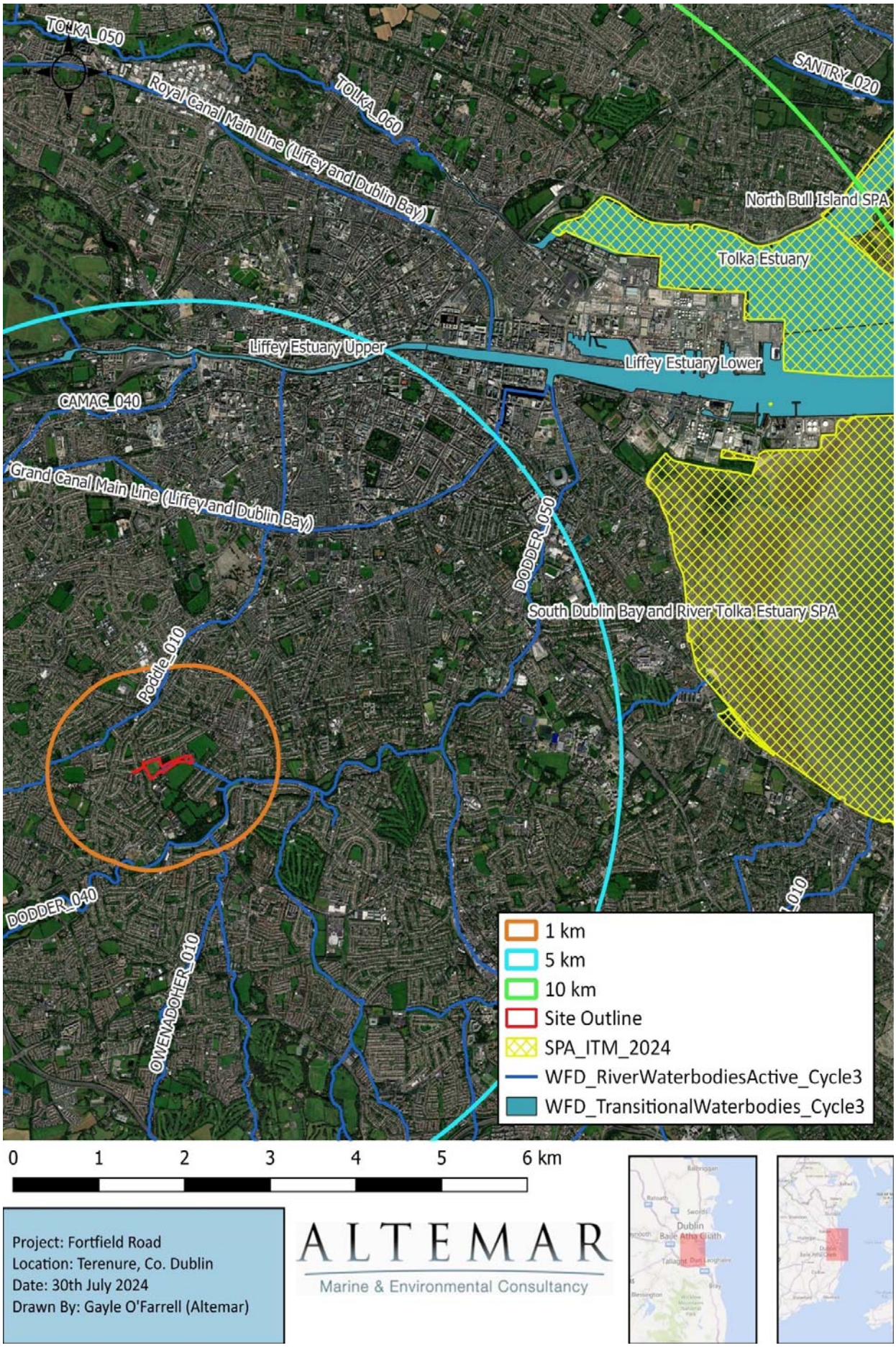


Figure 17. Watercourses and SPAs proximate of the proposed development site

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[5]:

The below projects have been permitted or are planned by Dublin City Council or An Bord Pleanála (ABP).

Table 3. In-combination effects considered

DLRCC/ ABP Reg. Ref.	Address	Overview of Development
4510/22	Terenure Rugby Football Club, 'Lakelands', Greenlea Grove, Terenure, Dublin 6W	- RETENTION: Permission for the retention of 1no. cafe facility, 3m x 2.4m x2.57m with a store space of 3.06m x 1.63m x 2.57m, presently located in the parking lot alongside the existing club house, and 1no. charcoal pizza facility, 4.7m x2.5m x2.57m located at the southern end of the parking lot adjacent to the main grass pitch at a 2.73 hectare site at Terenure Rugby Football Club, 'Lakelands', Greenlea Grove, Terenure, Dublin 6W. The site is accessed via Greenlea Grove.
SD22A/0404	Templeogue College, Templeville Road, Dublin 6	- The development will consist of the change of use of Templeogue College Community Residence and garage (c.767sqm) to a special educational needs school. The proposed works consists of the following; 1) reconfiguration and refurbishment (internal and external alterations) of existing building with new extension (c.9sqm) to the rear. The revised internal layout consists of 4no. classrooms and related ancillary school facilities (including reception area, principal's office, meeting room, living skills room, staff room, student and staff WC. 's and shower room, a sensory room, storage and new stairs. 2) reconfiguration of existing garage for rear access. The development will also consist of associated minor alterations to the existing facades and siteworks to facilitate the proposed development: 1) replace all existing windows, 2) new external classroom doors on the Western elevation, 3) new gently sloped access ramps and external covered walkways to the North, East and West elevations 4) 5 no. new car parking spaces and drop-,off point. 5) development of rear garden to include landscaping for 2no. soft play areas. 6) a new pedestrian access from Temple Ville Road
2033/19	ETB Sports Grounds, Templeogue Road, Terenure, Dublin 6W	The development will consist of alteration to existing boundary wall, including relocation of pillars and gates, to improve visibility and sightlines at existing vehicular entrance at Templeogue Road.
2997/20	Terenure Sports Club, 54, Terenure Road North, Dublin 6W	Planning permission for the removal of two existing single storey prefabricated changing room buildings, and the installation of two new single storey prefabricated changing room buildings in their place, with associated site works.
2134/18	St. Pancras Works, Mount Tallant Avenue, Terenure, Dublin 6W	PROTECTED STRUCTURE: Planning permission for development consisting of amendments and additions to a previously permitted development Reg. Ref 2710/14, 4296/15, 3609/16 and PL 29S.244337 comprising: (a) the replacement of 6 no. permitted apartments (2 no. 1 bed, 2 no. 2 bed, 2 no. 3 bed) with 8 no. apartments (2 no. 1 bed, 6 no. 2 bed) all at Third Floor level; (b) the provision of 3 no. additional apartments (1 no. 2 bed, 2 no. 3 bed) and associated access core and balconies at a new set-back Fourth Floor level; (c) elevational changes to all facades;

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

DLRCC/ ABP Reg. Ref.	Address	Overview of Development
		(d) all associated works including balconies, rooflights, infrastructural works, car parking and landscaping. - The 1.39 hectare (3.44 acres) site is accessed by an existing gateway from Mount Tallant Avenue, including piers and railings on a plinth wall which is a Protected Structure. No works are proposed to the Protected Structure as part of this planning application.
D17A/0716/C2	Castle Golf Club, Woodside Drive, Rathfarnham, Dublin 14	- Compliance re Condition no. 4. Permission for: 1. Demolition of existing single storey Caddy Masters building and general Store and construction of new single storey Caddy Masters building and single storey extension to existing Clubhouse Pro-Shop and bar store room with associated internal alterations. 2. Demolition of existing single storey Clubhouse kitchen service access, stores and plant rooms as well as kitchen extract and boiler chimney and construction of new two storey extension comprised of kitchen access stairway, stores, plant rooms and furniture store, including new rooftop mechanical plant installation in screened enclosure, new boiler with external flue as well as interior remodelling of existing kitchen and associated internal alterations. 3. Construction of new single storey coaching bay building adjacent to the existing practise tees and main entrance driveway off Woodside Drive. 4. Associated hard and soft landscape works, surface water attenuation works as required and associated general site works.
SD17A/0263	Grange Golf Club, Taylor's Lane, Rathfarnham, Dublin 16	The extension of the golf course playing area into the car-park located towards the north-western corner of the site, resulting in the loss of 16 car parking spaces; landscaping works and all associated works above and below ground (a Protected Structure).
2571/19	The High School, Zion Road, Rathgar, Dublin 6	- The development will consist of the replacement of an existing prefab shed with a new portal frame shed for use as maintenance machinery storage and associated site works.
SD14A/0204	St. Pius X Boys National School, Fortfield Park, Terenure, Dublin 6W	- Construction of a 15sq.m single storey flat roofed universal access toilet with ancillary and enabling works within an existing internal courtyard.
SD04A/0242/FEP	Former Eircom Training Centre, Wainsford Road, Terenure, Dublin 6W.	The modified development will consist of the construction of a reduced number of 189 no. residential units comprising: - 4 no. 3-storey 5/6 bedroom detached houses; 18 no. 3-storey 5 bedroom detached houses; 12 no. 3-storey 5 bedroom semi-detached houses; 31 no. 4 bedroom and 13 no. 3 bedroom townhouses in 12 no. 2 and 2.5 storey blocks; 2 no. 4 bedroom 2 storey detached houses (formerly semi-detached); 109 no. 1, 2 and 3 bedroom apartments with associated balconies and 263sq.m. fitness centre located in 3 no. 4 storey blocks over semi-basement car park; one sheltered housing unit containing 51 1 and 2 bedroom suites and communal facilities in a 4 storey block over semi-basement car park; a reduced 2 storey 200sq.m. crèche; and ancillary works including relocated sub-surface waste and surface water holding tanks; demolition of existing buildings within the site; on lands comprising the former Eircom Training Centre. Vehicular access to the proposed development would be provided from Wainsfort Manor Drive.
3959/21	Leo Pharma , 285 Cashel Road, Dublin 12	- Planning permission for the development will consist of construction of a single storey commodity store between buildings L and C and all associated site woks.

There are no significant projects that have been granted planning or currently under construction, proximate to the development, that could potentially cause in combination effects on European sites.

Ringsend WwTP

The foul sewer terminates at Ringsend Waste Water Treatment Plant (WWTP). The foul water from the site will transfer to the Ringsend WWTP via public foul sewer where it will be diluted and mixed with other effluent. Treatment will take place at Ringsend WWTP prior to discharge into Dublin Bay. Uisce Éireann operate this facility under licence (EPA D0034-01) and are required to comply with environmental legislation. In 2019 (ABP Ref. PL29S.301798), the facility received planning to upgrade capacity to 2.4 million PE. The EIAR for the upgrading of Ringsend WWTP stated that "[t]*he likely cumulative impact of the Proposed WwTP Component is that the resident population of the Greater Dublin Area will be capable of growing to its target population levels over time due to the increased capacity of the Ringsend WwTP. This will enable objectives at both national and regional levels to be met. Note that Phase 1 of these works is currently underway with a target completion date of 202*1."

As outlined in the Uisce Éireann website "[i]*n February 2018, the work commenced on the first element, the construction of a new 400,000 population equivalent extension at the Ringsend Wastewater Treatment Plant*."

"*Uisce Éireann completed construction of the infrastructure to treat the wastewater for a population equivalent of 2.1 million at the end of 2023. Following a period of testing and commissioning the upgraded assets are operational.*

Compliance with the Urban Wastewater Treatment Directive is assessed retrospectively based on the attainment of 12 months compliance with the UWWTD Emission Limit Values (ELVs). We are monitoring the performance of the plant closely with a view to achieving this at the earliest possible time. We are also continuing works on the remaining project elements to deliver the capacity for a population equivalent of 2.4 million by the end of 2025."

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, insignificant and localised. It is concluded that no significant effects on Natura 2000 sites will occur due to the proposed development in combination with other projects. No in-combination effects are foreseen.

Following the implementation of mitigation measures, as set out in Table 14, no significant effects are likely from in-combination effects.

Further Information on European Sites Screened In for NIS

South Dublin Bay SAC (Site code: 000210)

South Dublin Bay SAC is located 5.9 km from the planning boundary. There is potential for the proposed development to be hydrologically connected to South Dublin Bay SAC, via the surface water network from the site which discharges to the onsite pond, which discharges to the River Dodder (via its tributary, the River Slang) and ultimately outfalls to the marine environment at Dublin Bay. In the absence of mitigation measures there is potential for pollutants and chemicals to enter the surface water, the River Dodder and ultimately the South Dublin Bay SAC, during the construction of the development and negatively impact on the features of interest or conservation objectives of the proposed development.

Site-specific data

As outlined in the South Dublin Bay SAC Site Synopsis[6] (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 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.

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

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)[7] 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[8] (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.'*

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

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

The Qualifying Interests (QI) (Features of Interest) and the National conservation status of the QI for Coole-South Dublin Bay SAC are seen in Table 4.

***Table 4**. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for South Dublin Bay SAC*

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
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**

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

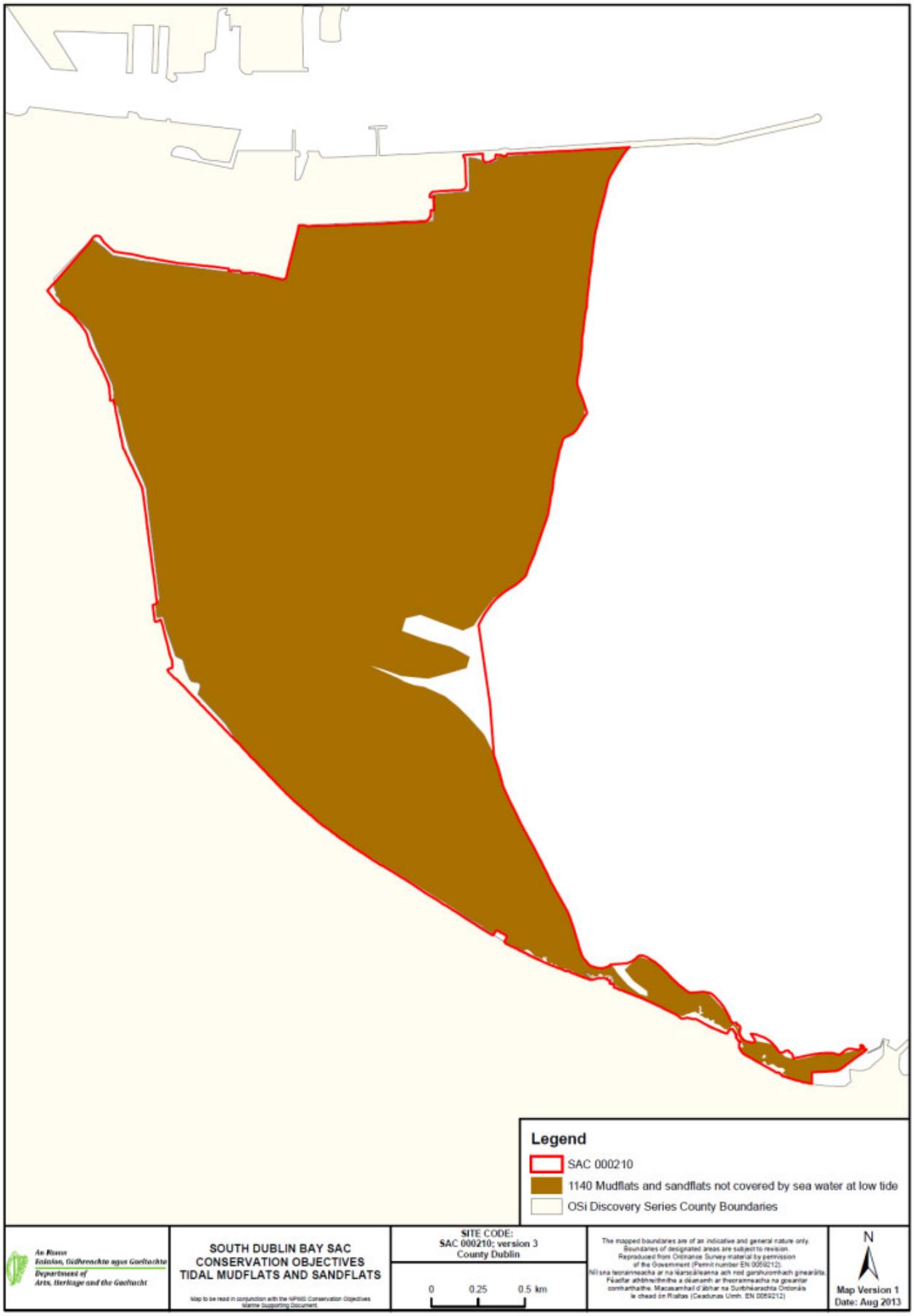
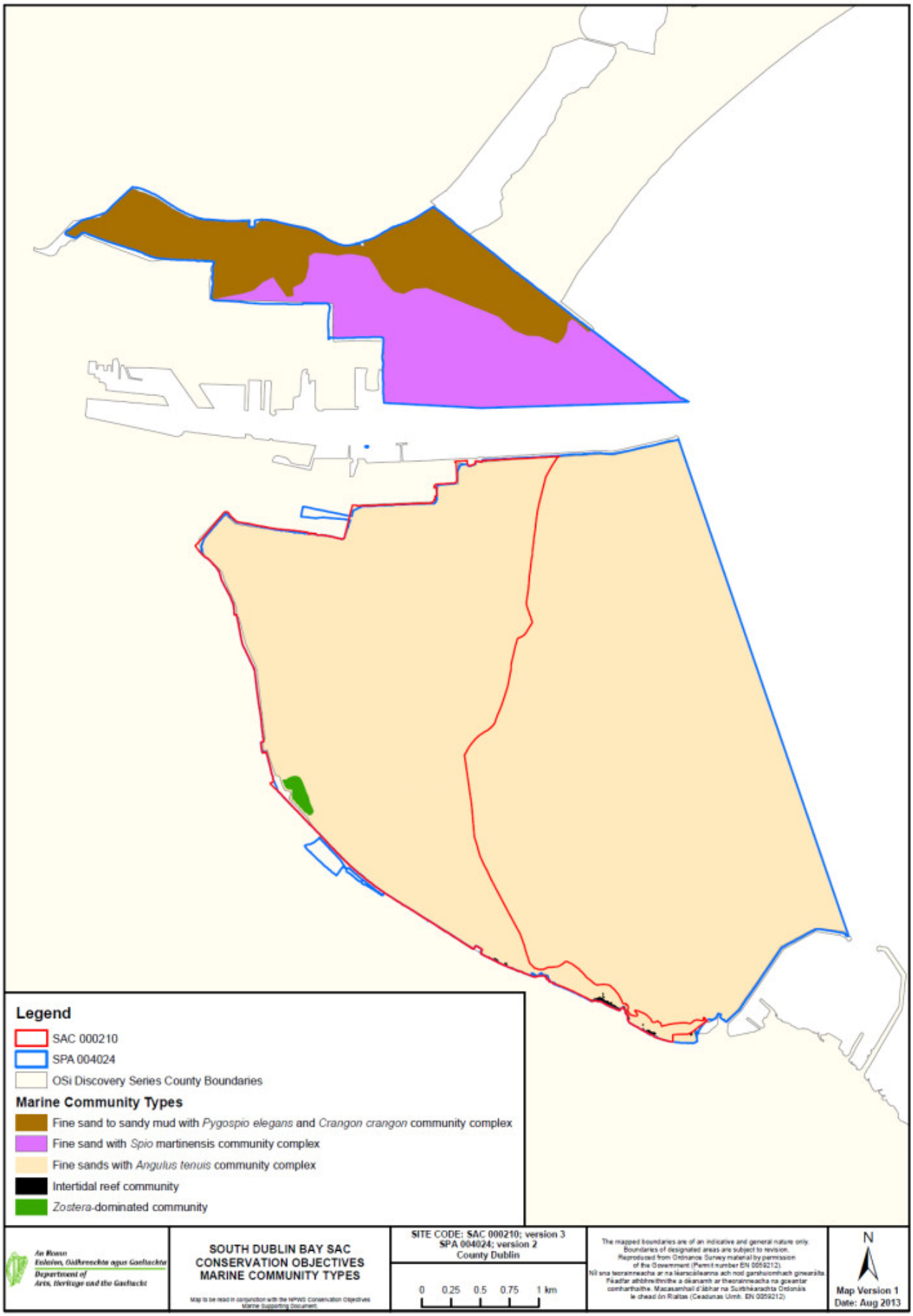


Figure 2. Distribution of community types in South Dublin Bay SAC



The attribute, measure and target of the site-specific Conservation Objectives for South Dublin Bay SAC are seen in Table 5.

Table 5. *Attribute, measure and target of the site conservation objectives for South Dublin Bay SAC*

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 (Site code: 000206)

North Dublin Bay SAC is located 9.6 km from the proposed development site. There is potential for the proposed development to be hydrologically connected to North Dublin Bay SAC, via the surface water network from the site which discharges to the onsite pond, which discharges to the River Dodder (via its tributary, the River Slang) and ultimately outfalls to the marine environment at Dublin Bay. In the absence of mitigation measures there is potential for pollutants and chemicals to enter the surface water, the River Dodder and ultimately the North Dublin Bay SAC, during the construction of the development and negatively impact on the features of interest or conservation objectives of North Dublin Bay SAC.

Site-specific data

As outlined in the North Dublin Bay SAC Site Synopsis[9] (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

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

on the extreme upper marsh, the rushes Juncus maritimus and J. gerardi are dominant. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

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

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

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

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

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

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

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

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

The Natura 2000 Standard Data Form (2020)[10] 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 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 for North Dublin Bay SAC (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):*

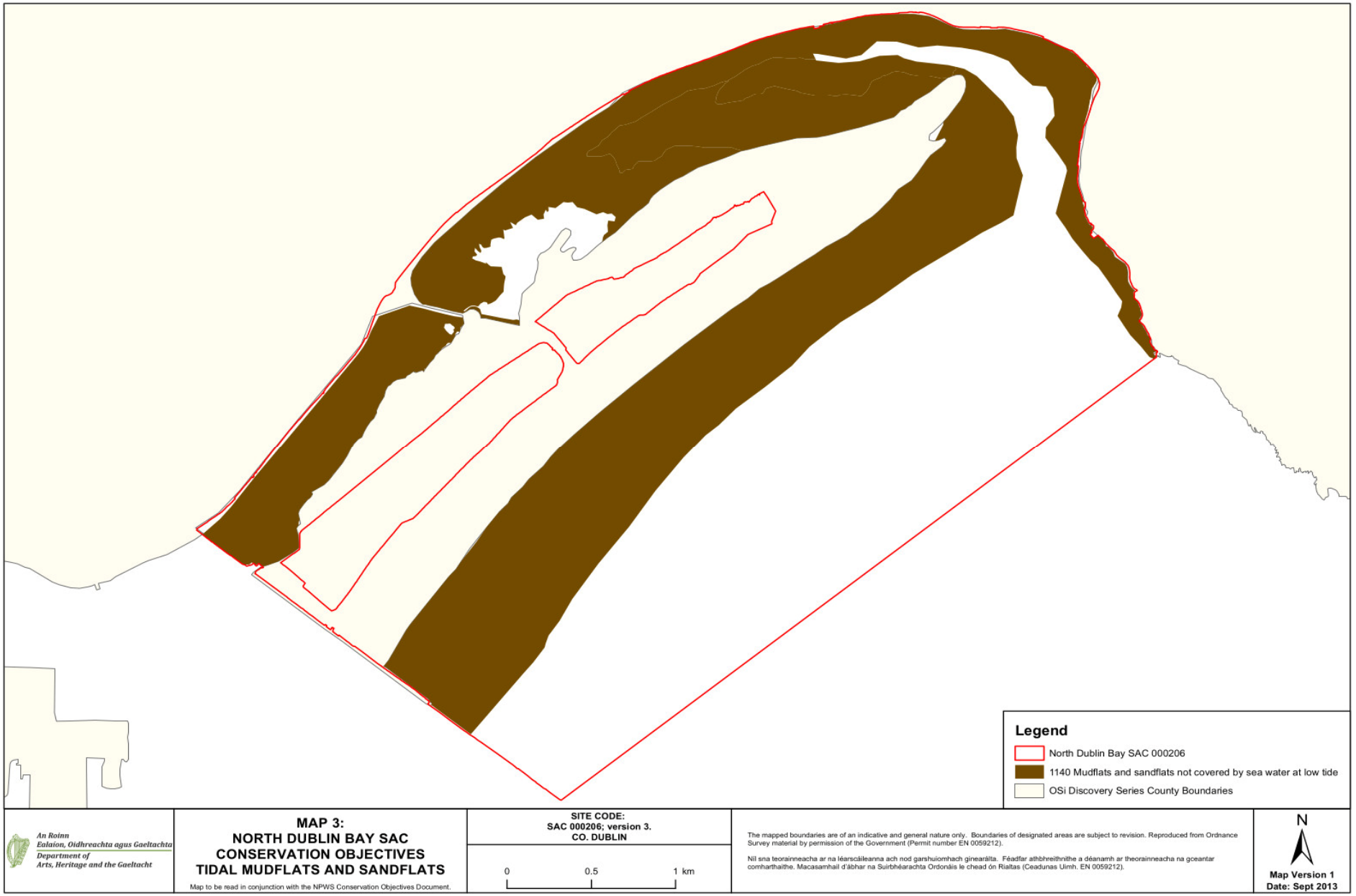
- *Salicornia and other annuals colonising mud and sand (1310)*
- *Atlantic salt meadows (Glauco-Puccinellietalia maritimae) (ASM) (1330)*
- *Mediterranean salt meadows (Juncetaliea maritimi) (MSM) (1410)*
- *Annual vegetation of drift lines (1210)*
- *Embryonic shifting dunes (2110)*
- *Shifting dunes 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.'

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



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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

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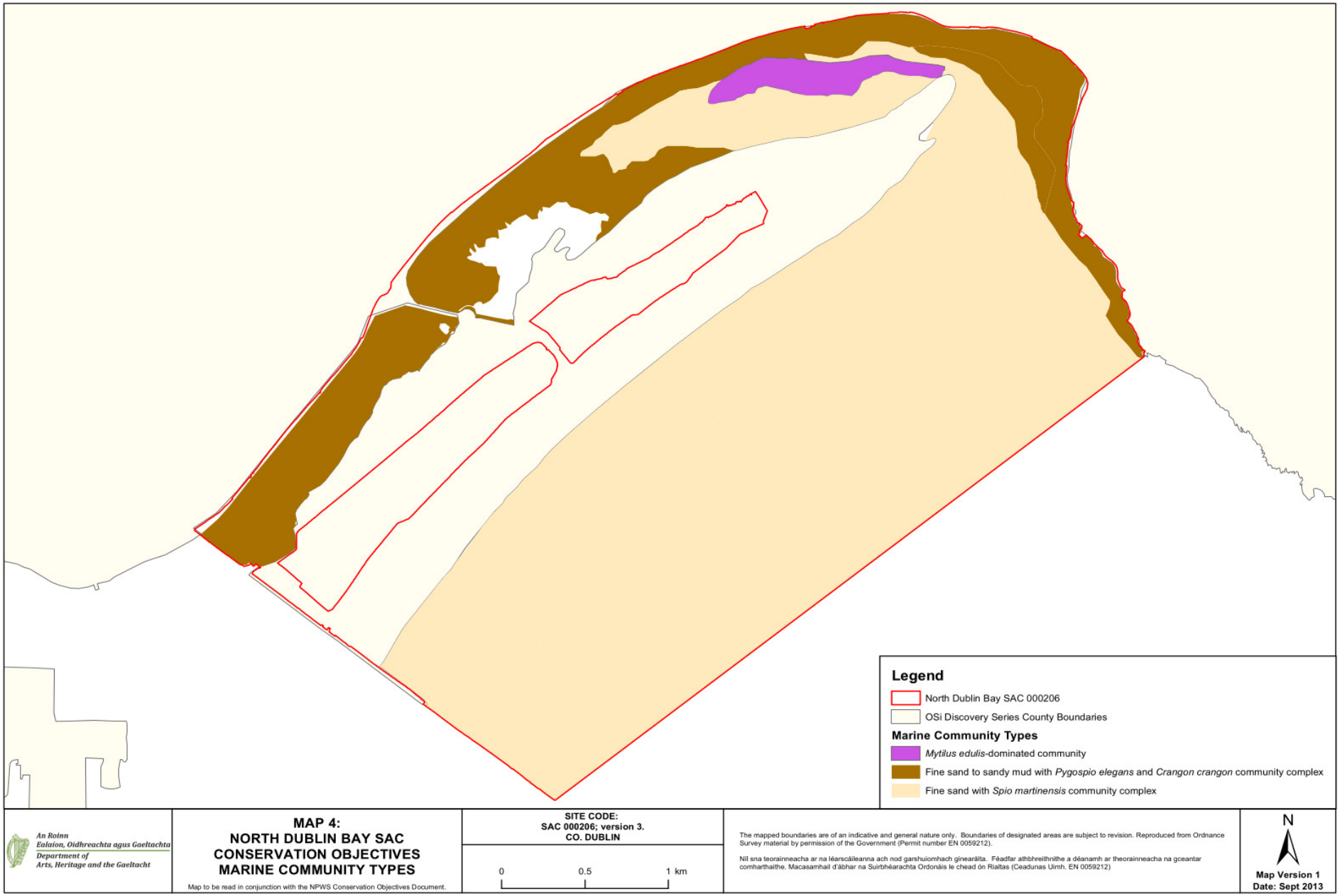
Map Version 1
Date: Sept 2013


Legend
North Dublin Bay SAC 000206
OSi Discovery Series County Boundaries
Marine Community Types
Mytilus edulis-dominated community
Fine sand to sandy mud with Pygospio elegans and Crangon crangon community complex
Fine sand with Spio martinensis community complex
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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
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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)
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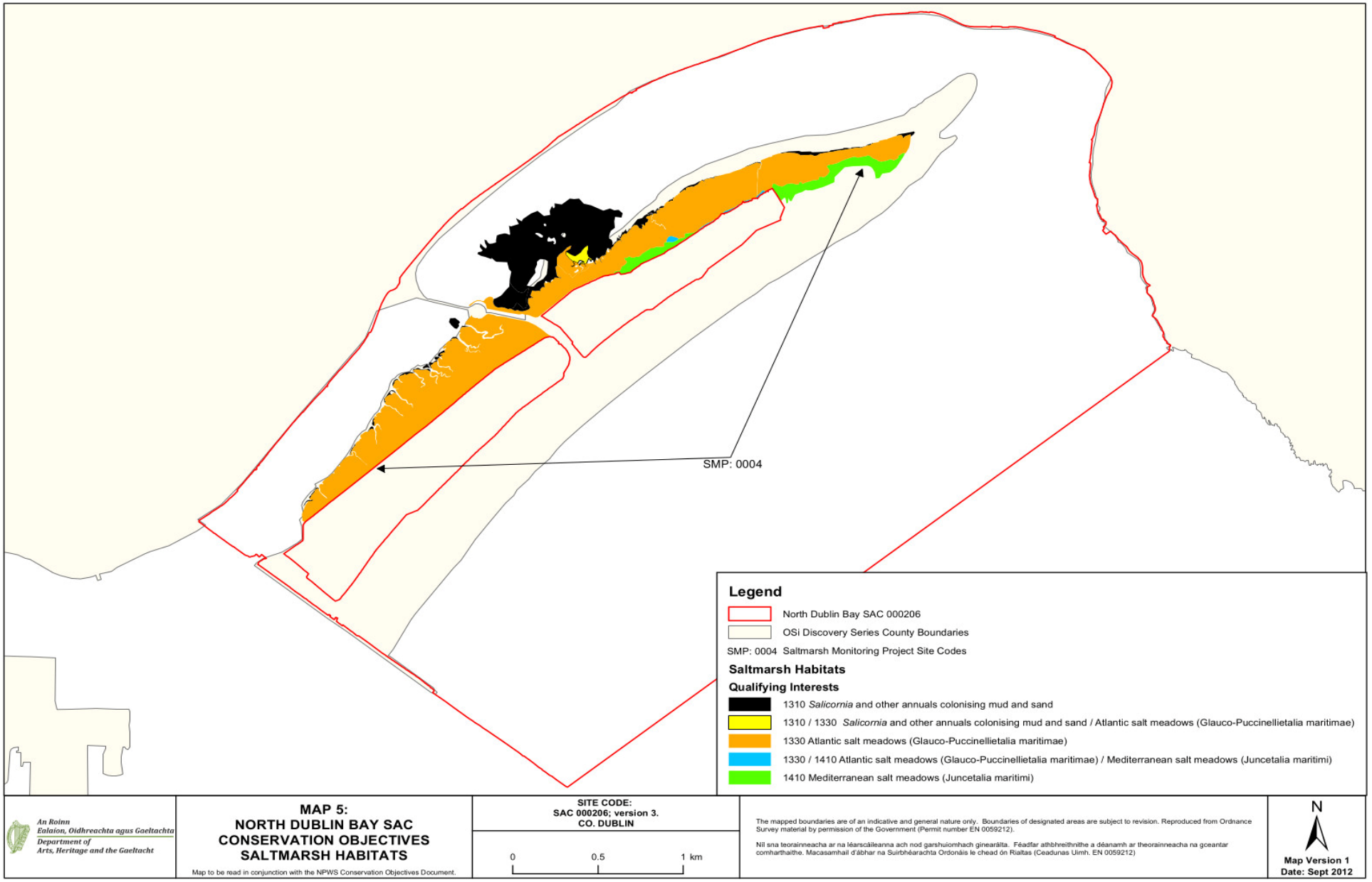
Map Version 1
Date: Sept 2013


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)
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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
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1 km
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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)
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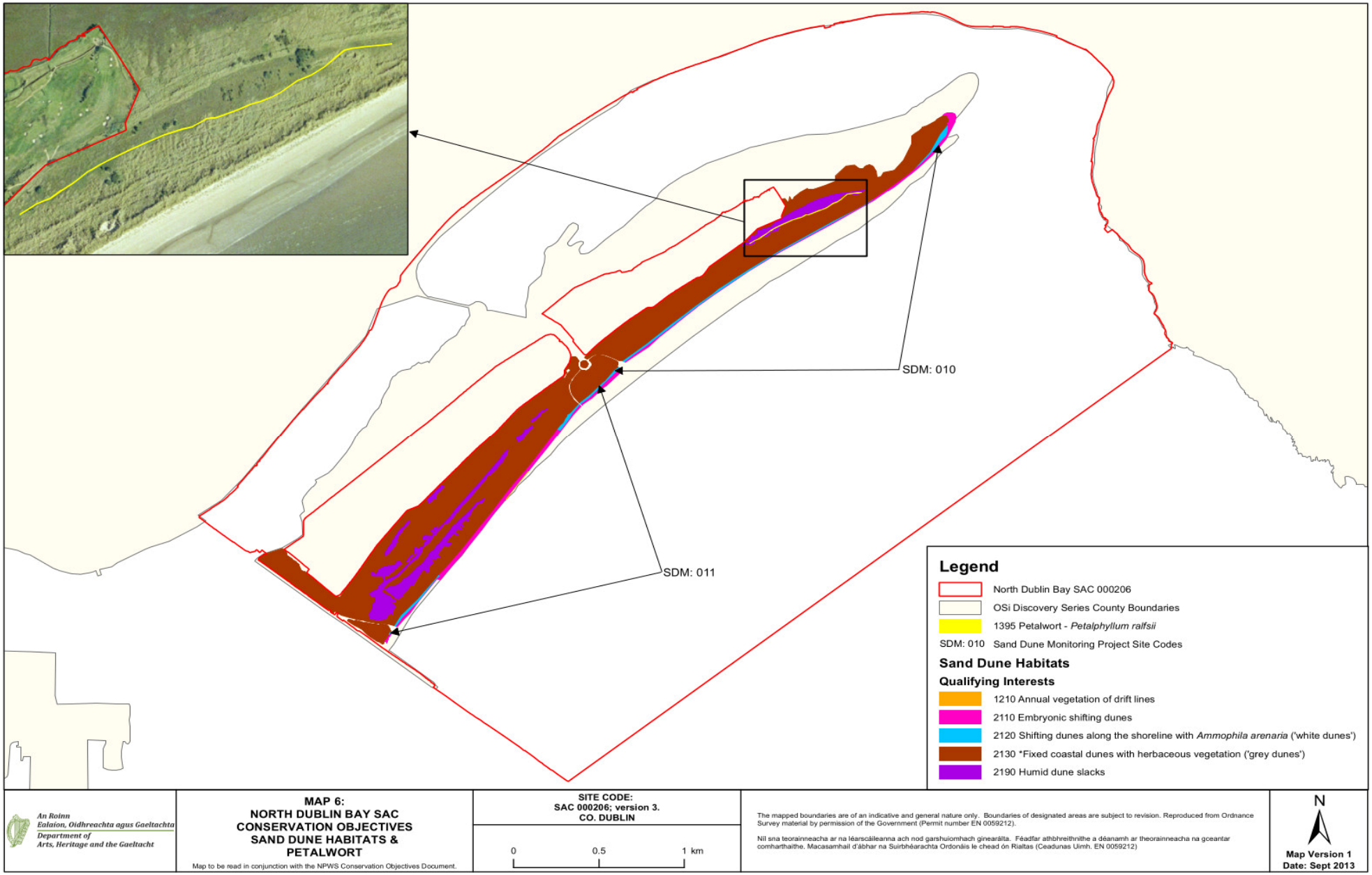
Map Version 1
Date: Sept 2012


SDM: 010
SDM: 011
Legend
North Dublin Bay SAC 000206
OSi Discovery Series County Boundaries
1395 Petalwort - Petalphyllum ralfsii
SDM: 010 Sand Dune Monitoring Project Site Codes
Sand Dune Habitats
Qualifying Interests
1210 Annual vegetation of drift lines
2110 Embryonic shifting dunes
2120 Shifting dunes along the shoreline with Ammophila arenaria ('white dunes')
2130 *Fixed coastal dunes with herbaceous vegetation ('grey dunes')
2190 Humid dune slacks
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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
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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).
Níl 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 cead ón Rialtas (Ceadunas Uimh. EN 0059212)
N
Map Version 1
Date: Sept 2013

The Qualifying Interests (QI) (Features of Interest) and the National conservation status of the QI for the North Dublin Bay SAC

Table 6. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for

Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
European Site Name & Code	**Qualifying Interests**	**Current Conservation Status & Trend**
North Dublin Bay SAC (000206)	Mudflats and sandflats not covered by seawater at low tide [1140]	**Inadequate**
	Annual vegetation of drift lines [1210]	**Inadequate**
	Salicornia and other annuals colonising mud and sand [1310]	**Favourable**
	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	**Inadequate**
	Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	**Inadequate**
	Embryonic shifting dunes [2110]	**Inadequate**
	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	**Inadequate**
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	**Bad**
	Humid dune slacks [2190]	**Inadequate**
	Petalwort (*Petalophyllum ralfsii*) [1395]	**Favourable**

The attribute, measure and target of the site-specific Conservation Objectives for North Dublin Bay SAC are seen in Table 7.

Table 7. *Attribute, measure and target of the site conservation objectives for North Dublin Bay SAC*

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

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

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
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
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

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
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%.
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

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
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 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
Vegetation structure: sward height	Centimetres	Maintain structural variation within sward

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
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)		
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

North Dublin Bay SAC (000206)		
Attribute	**Measure**	**Target**
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 (Site code: 0004024)

South Dublin Bay and River Tolka Estuary SPA is located 5.8 km from the proposed development site. There is potential for the proposed development to be hydrologically connected to South Dublin Bay and River Tolka Estuary SPA, via the surface water network from the site which discharges to the River Dodder (via its tributary, the River Slang) that outfalls to the River Liffey Estuary and ultimately to the marine environment at Dublin Bay. In the absence of mitigation measures there is potential for pollutants and chemicals to enter the surface water, the River Dodder, River Liffey Estuary and ultimately the South Dublin Bay and River Tolka Estuary SPA, during the construction of the development and negatively impact on the features of interest or conservation objectives of the proposed development.

As outlined in the site synopsis (NPWS, version date 30.5.2015)[11]:

'*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.

[11] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000238.pdf

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

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

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

The Natura 2000 Standard Data Form (2021)[12] 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[13] (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.*

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

[13] *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

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.

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. 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:

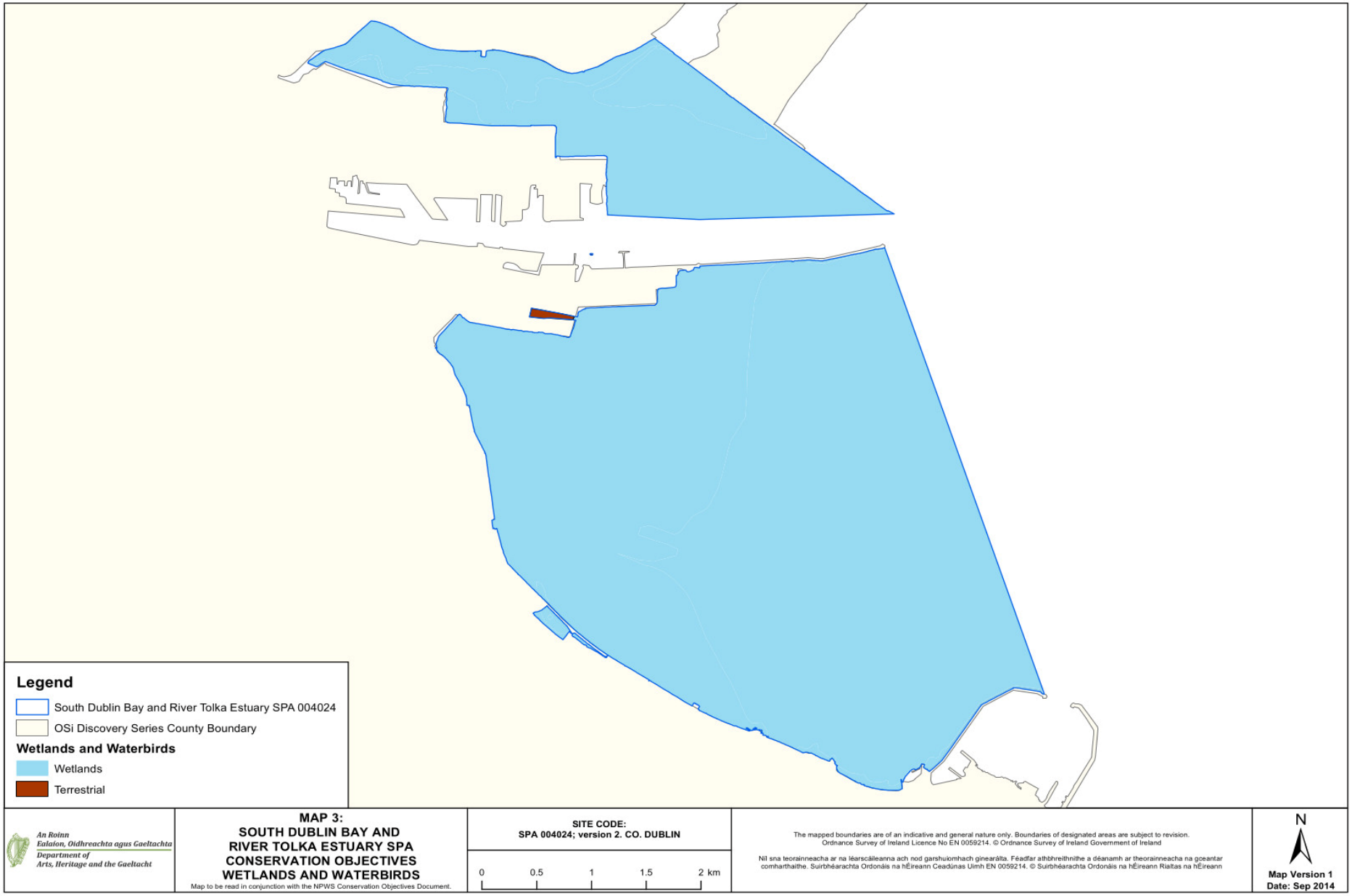
- *To be favourable, the permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 3,904 ha, other than that occurring from natural patterns of variation.*

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).'

The Special Conservation Interests (SCI) (Features of Interest) and the National conservation status of the SCI for South Dublin Bay and River Tolka Estuary SPA are seen in Table 8.

Table 8. *Special Conservation Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for South Dublin Bay and River Tolka Estuary SPA.*

Special Conservation Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
European Site Name & Code	**Special Conservation Interests**	**Current Conservation Status & Trend**
South Dublin Bay and River Tolka Estuary SPA (004024)	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	**Amber**
	Oystercatcher (*Haematopus ostralegus*) [A130]	**Amber**
	Ringed Plover (*Charadrius hiaticula*) [A137]	**Green**
	Grey Plover (*Pluvialis squatarola*) [A141]	**Amber**
	Knot (*Calidris canutus*) [A143]	**Amber**
	Sanderling (*Calidris alba*) [A144]	**Green**
	Dunlin (*Calidris alpina*) [A149]	**Red**
	Bar-tailed Godwit (*Limosa lapponica*) [A157]	**Amber**
	Redshank (*Tringa totanus*) [A162]	**Red**
	Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	**Red**
	Roseate Tern (*Sterna dougallii*) [A192]	**Amber**
	Common Tern (*Sterna hirundo*) [A193]	**Amber**
	Arctic Tern (*Sterna paradisaea*) [A194]	**Amber**
	Wetland and Waterbirds [A999]	**N/A**



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

Table 9. Attribute, measure and target of the site conservation objectives for South Dublin Bay and River Tolka Estuary SPA

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
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

South Dublin Bay and River Tolka Estuary SPA (004024)		
Attribute	Measure	Target
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 (Site code: 0004006)

North Bull Island SPA is located 8.0 km from the proposed development site. There is potential for the proposed development to be hydrologically connected to North Bull Island SPA, via the surface water network from the site which connects to the River Dodder (via its tributary, the River Slang), outfalling into the River Liffey Estuary and ultimately outfalls to the marine environment at Dublin Bay. In the absence of mitigation measures there is potential for pollutants and chemicals to enter the surface water, the River Dodder, the River Liffey Estuary and ultimately the North Bull Island SPA, during the construction of the development and negatively impact on the features of interest or conservation objectives of the proposed development.

As outlined in the North Bull Island SPA Site Synopsis[14] (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

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

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.'

The Natura 2000 Standard Data Form (2020)[15] 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[16] (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*

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

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

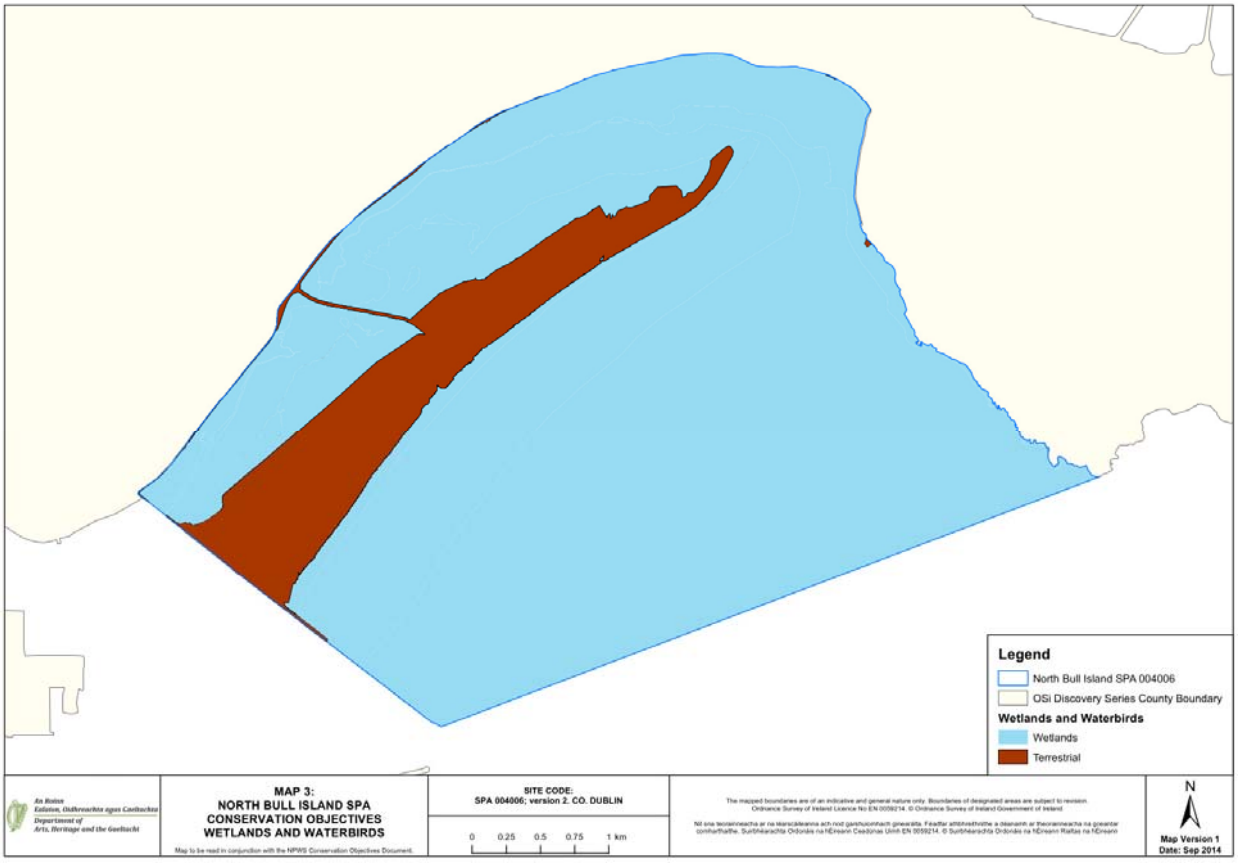
provides the main roost site for wintering birds in Dublin Bay. Macroalgal mats of filamentous Ulva spp. (formerly Enteromorpha spp.) 1 are prevalent.

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 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 Special Conservation Interests (SCI) (Features of Interest) and the National conservation status of the SCI for North Bull Island SPA are seen in Table 10.

***Table 10**. Special Conservation Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for North Bull Island SPA.*

Special Conservation Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
European Site Name & Code	**Special Conservation Interests**	**Current Conservation Status & Trend**
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 11. Attribute, measure and target of the site conservation objectives for North Bull Island SPA

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

North-West Irish Sea SPA (Site code: 004236)

North-West Irish Sea SPA is located 10.4 km from the proposed development site. There is potential for the proposed development to be hydrologically connected to North-West Irish Sea SPA, via the surface water network from the site which discharges to the River Dodder (via its tributary, the River Slang) that outfalls to the River Liffey Estuary and ultimately the marine environment at Dublin Bay. In the absence of mitigation measures there is potential for pollutants and chemicals to enter the surface water, River Dodder, River Liffey Estuary and ultimately the North-West Irish Sea SPA, during the construction of the development and negatively impact on the features of interest or conservation objectives of the proposed development.

As outlined in the North-West Irish Sea SPA Site Synopsis[17] (NPWS, version date 17.07.2023)

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

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

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Common Scoter, Red-throated Diver, Great Northern Diver, Fulmar, Manx Shearwater, Shag, Cormorant, Little Gull, Kittiwake, Black-headed Gull, Common Gull, Lesser Black-backed Gull, Herring Gull, Great Black-backed Gull, Little Tern, Roseate Tern, Common Tern, Arctic Tern, Puffin, Razorbill and Guillemot.

The breeding seabird species listed for those SPAs, which abut the North-West Irish Sea SPA are: Fulmar (Lambay Island SPA); Cormorant (Skerries Island SPA; Ireland's Eye SPA; Lambay Island SPA); Shag (Skerries Island SPA; Lambay Island SPA); Lesser Black-backed Gull (Lambay Island SPA); Herring Gull (Skerries Island SPA; Ireland's Eye SPA; Lambay Island SPA); Kittiwake (Lambay Island SPA; Ireland's Eye SPA; Howth Head SPA); Roseate Tern (Rockabill SPA); Common Tern (Rockabill SPA;); Arctic Tern (Rockabill SPA); Little Tern (Boyne Estuary SPA); Guillemot (Lambay Island SPA, Ireland's Eye SPA); Razorbill (Lambay Island SPA, Ireland's Eye SPA); and Puffin (Lambay Island SPA). The Common Tern population that is listed for the nearby South Dublin Bay and River Tolka Estuary SPA is also likely to use this SPA as a foraging resource.

Informed by two surveys of the western Irish Sea region in 2016 an estimated 120,232 and 34,626 individual marine birds occurred in this SPA during autumn and winter respectively. Those marine bird species whose estimated abundances equalled or exceeded 1% of the total estimated size of the winter assemblage are: Red-throated Diver (538), Fulmar (506), Little Gull (391), Kittiwake (944), Black-headed Gull (508), Common Gull (2,866), Herring Gull (6,893), Great Black-backed Gull (2,096), Razorbill (4,638) and Guillemot (13,914).

The estimated 2016 summer abundance of Manx Shearwater in the North West Irish Sea SPA is 13,010 and is of international importance. The estimated 2016 autumn and winter abundances of Great Northern Diver in the North West Irish Sea SPA is 248 and 230 respectively and are of international importance. The estimated abundances of Common Scoter over parts of this SPA can reach significant numbers (e.g. 14,567 in December 2018) which is also of international importance.'

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

***Table 12**. Special Conservation Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for North-West Irish Sea SPA.*

Special Conservation Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites		
Natura 2000 Site Name & Code	Special Conservation Interests	Current Conservation Status & Trend
North-West Irish Sea SPA (004236)	Common Scoter (*Melanitta nigra*) [A065] Red-throated Diver (*Gavia stellata*) [A001] Great Northern Diver (*Gavia immer*) [A003] Fulmar (*Fulmarus glacialis*) [A009] Manx Shearwater (*Puffinus puffinus*) [A013] Cormorant (*Phalacrocorax carbo*) [A017] Little Tern (*Sterna albifrons*) [A195] Kittiwake (*Rissa tridactyla*) [A188] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Herring Gull (*Larus argentatus*) [A184] Roseate Tern (*Sterna dougallii*) [A192] Arctic Tern (*Sterna paradisaea*) [A194] Puffin (*Fratercula arctica*) [A204] Razorbill (*Alca torda*) [A200] Guillemot (*Uria aalge*) [A199] Little Gull (*Hydrocoloeus minutus*) (A862) Common Tern (*Sterna hirundo*) (A193)	**Red** **Amber** **Amber** **Amber** **Amber** **Amber** **Amber** **Red** **Amber** **Amber** **Amber** **Amber** **Amber** **Amber** **Red** **Amber** **Amber** **Amber** **Amber**

Analysis of the Potential Impact on European Sites

Construction Impacts

In the absence of mitigation measures the construction of the proposed development would impact on the existing ecology of the site, the surrounding area, the River Dodder, River Liffey Estuary and the downstream designated European sites (South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and North-West Irish Sea SPA), via the surface water network leading to Dublin Bay. The proposed development involves the re-profiling, groundworks and the construction of a mixed-use residential development, with the potential for runoff, dust, light and noise impacts that could impact on waterbodies proximate to the site, and other biodiversity due to potential for downstream impacts. It is considered that there is potential for significant effects on the qualifying interests of the European sites in the absence of mitigation measures. Construction phase mitigation measures are required on site in relation to the protection and monitoring of the water quality entering the River Dodder, via the surface water discharge. There is potential for silt laden runoff, dust, or contamination to enter the River Dodder and surface water network, with potential for impacts on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and North-West Irish Sea SPA.

Operational Impacts

Once constructed, foul wastewater from the proposed development will be directed to an existing foul sewerage system. Foul wastewater will then outfall to Ringsend WwTP for treatment. Surface water drainage will be directed to the River Dodder which outfalls to the River Liffey Estuary and ultimately to South Dublin Bay SAC and South Dublin & River Tolka Estuary SPA. There is also a direct hydrological pathway to North Dublin Bay SAC, North Bull Island SPA and North-West Irish Sea SPA. In the absence of mitigation measures, there is potential for silt laden runoff, dust, or contamination to enter the River Dodder (via its tributary, the River Slang) with potential for downstream impacts. Measures, such as Sustainable Urban Drainage Systems (SUDs), will be required to ensure that water quality is maintained prior to discharge from the subject site.

Designated European Sites

The proposed development is not within a designated conservation site. However, there is potential for pollutants to enter the surface water network, which discharges to the River Dodder. The River Dodder ultimately outfalls to the marine environment at Dublin Bay. Therefore, there is a direct hydrological pathway from the proposed development to the designated European sites at Dublin Bay (South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and North-West Irish Sea SPA).

The construction of the proposed development and the proposal to discharge surface water from the site to the onsite pond, which ultimately discharges to the River Dodder would potentially impact on the watercourse through silt laden runoff and pollution. These potential construction impacts on the European site are seen in Table 6. Mitigation measures are required to ensure that the proposed development will not adversely affect the integrity of the European Sites on the conservation objectives of the European site.

Mitigation Measures and Monitoring

Construction and operational mitigation will be incorporated into the proposed development project to minimise the potential negative impacts within the Zone of Influence (ZoI) including the River Dodder and downstream European sites (Table 8).

Table 13. Potential for adverse effects on the qualifying interests and conservation objectives of European sites		
European Site & Site Code	Qualifying Interests / Special Conservation 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]	There is a direct pathway from the proposed development to this SAC. Unmitigated works have the potential for downstream impacts on habitats of conservation importance through the introduction of silt and pollution during construction and operation. Other potential significant effects have been ruled out at screening stage. Site reprofiling, management of excess surface/ground water, storage of topsoil or construction works in the vicinity of the onsite pond which leads to the River Dodder could lead to dust, soil, pollution, or silt laden runoff entering the River Dodder with potential downstream impacts. Contaminated surface water runoff on site during construction or operation may lead to silt, cement or contaminated materials from the site entering the River Dodder with downstream impacts on the SAC. If on-site concrete production is required or cement works are carried out in the vicinity of River Dodder, there is potential for contamination of River Dodder. 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 of the surface water leading to the River Dodder. Given the nature of the works, all of these effects would be expected to be localised in nature and restricted to the vicinity of the site. However, in the absence of mitigation there is potential of impact on the pond which discharges to the River Dodder and ultimately the marine environment at Dublin Bay and the surrounding European sites. In the absence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the watercourse with potential for downstream impacts on South Dublin Bay SAC. 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] Silt and pollution could potentially lead to effects resulting in a reduction in diversity and abundance of sensitive communities and habitats within the SAC through a reduction in water quality and increased siltation. Mitigation measures are required to limit the potential of adverse effects on the integrity of this SAC from in direct pathways via the surface water drainage network.

Table 13. Potential for adverse effects on the qualifying interests and conservation objectives of European sites		
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] 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]	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 pond and subsequently the 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, 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 the undertaking of works, in the vicinity of the pond on site could lead to dust, soil or silt laden runoff entering the connecting watercourse. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite pond 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/pond 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. During operation there is potential for petrochemicals to enter the drainage network in the absence of mitigation. Out of an abundance of caution it is considered that 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 SUDs, if significant amounts of pollution were to enter the direct hydrological pathway. In the absence of SUDs there would be 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]

Table 13. Potential for adverse effects on the qualifying interests and conservation objectives of European sites		
		Mitigation measures are required to remove the potential of impacts on the SPA from direct pathways via the pond on site. Silt and pollution could potentially lead to effects resulting in a reduction in diversity and abundance of sensitive communities and habitats within the SAC through a reduction in water quality and increased siltation. Mitigation measures are required to limit the potential of adverse effects on the integrity of this SAC from in direct pathways via the surface water drainage network.
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] 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]	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 pond 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 the undertaking of works in the vicinity of the pond on site could lead to dust, soil or silt laden runoff entering adjacent watercourses. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite pond/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/pond 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. Impacts on the SPA from upstream sources have the potential to directly impact on the SCIs 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 SCIs: • 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]

Table 13. Potential for adverse effects on the qualifying interests and conservation objectives of European sites		
	Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]	• Roseate Tern (*Sterna dougallii*) [A192] • Common Tern (*Sterna hirundo*) [A193] • Arctic Tern (*Sterna paradisaea*) [A194] 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 (Appendix II). 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] 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]	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 pond and watercourse with potential for downstream impacts on North Bull Island SPA. 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 pond on site could lead to dust, soil or silt laden runoff entering the onsite pond that connects with the River Dodder. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite pond 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/pond 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 and in watercourses. Further, out of an abundance of caution, it is considered that there is the remote potential for disturbance/displacement of the SCIs of this SPA during construction works, including through movement of machinery, personnel, noise, vibration and/or noise associated with construction. Impacts on the SPA from upstream sources have the potential to directly impact on the SCIs 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 SCIs: • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] • Shelduck (*Tadorna tadorna*) [A048] • Teal (*Anas crecca*) [A052] • Pintail (*Anas acuta*) [A054]

Table 13. Potential for adverse effects on the qualifying interests and conservation objectives of European sites		
	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]	• 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 SCIs 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 SCIs of this SPA during construction works 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-West Irish Sea SPA	Common Scoter (*Melanitta nigra*) [A065] Red-throated Diver (*Gavia stellata*) [A001] Great Northern Diver (*Gavia immer*) [A003] Fulmar (*Fulmarus glacialis*) [A009] Manx Shearwater (*Puffinus puffinus*) [A013] Cormorant (*Phalacrocorax carbo*) [A017] Little Tern (*Sterna albifrons*) [A195] Kittiwake (*Rissa tridactyla*) [A188] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182]	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 pond and watercourse with potential for downstream impacts on North-West Irish Sea 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 pond on site could lead to dust, soil or silt laden runoff entering adjacent watercourses and pond. Contaminated surface water runoff on site during construction or operation may lead to silt or contaminated materials from site entering the onsite pond 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/pond 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 SCIs 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 SCIs : • Common Scoter (*Melanitta nigra*) [A065] • Red-throated Diver (*Gavia stellata*) [A001] • Great Northern Diver (*Gavia immer*) [A003]

Table 13. Potential for adverse effects on the qualifying interests and conservation objectives of European sites		
	Lesser Black-backed Gull (*Larus fuscus*) [A183] Herring Gull (*Larus argentatus*) [A184] Roseate Tern (*Sterna dougallii*) [A192] Arctic Tern (*Sterna paradisaea*) [A194] Puffin (*Fratercula arctica*) [A204] Razorbill (*Alca torda*) [A200] Guillemot (*Uria aalge*) [A199] Little Gull (*Hydrocoloeus minutus*) (A862) Common Tern (*Sterna hirundo*) (A193)	• Fulmar (*Fulmarus glacialis*) [A009] • Manx Shearwater (*Puffinus puffinus*) [A013] • Cormorant (*Phalacrocorax carbo*) [A017] • Little Tern (*Sterna albifrons*) [A195] • Kittiwake (*Rissa tridactyla*) [A188] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Common Gull (*Larus canus*) [A182] • Lesser Black-backed Gull (*Larus fuscus*) [A183] • Herring Gull (*Larus argentatus*) [A184] • Roseate Tern (*Sterna dougallii*) [A192] • Arctic Tern (*Sterna paradisaea*) [A194] • Puffin (*Fratercula arctica*) [A204] • Razorbill (*Alca torda*) [A200] • Guillemot (*Uria aalge*) [A199] • Little Gull (*Hydrocoloeus minutus*) (A862) • Common Tern (*Sterna hirundo*) (A193 Further, out of an abundance of caution, it is considered that there is the remote potential for disturbance/displacement of the SCIs of this SPA during construction works 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. The impacts from silt and pollution could potentially lead to effects resulting in a reduction in diversity and abundance of sensitive communities and habitats within the SPA through a reduction in water quality and increased siltation. This could potentially lead to a reduction in diversity and abundance on prey items, including intertidal infauna. In addition, wetlands and birds themselves could potentially be impacted through the introduction of silt and pollution. Mitigation measures are required to remove the potential of adverse effects on the integrity of this SPA from indirect pathways via the surface water drainage network.

Table 14. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation
South Dublin Bay SAC North Dublin Bay SAC South Dublin Bay and River Tolka Estuary SPA North Bull Island SPA North-West Irish Sea SPA	• Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream impacts • Negative impacts on the aquatic environment, aquatic species and qualifying interests.	The accompanying Ecological Impact Assessment, Outline Construction Management Plan and Outline Resource & Waste Management Plan outline the required mitigation measures in detail. These measures will be carried out. The OCEMP has incorporated these mitigation measures. It should be noted that no additional measures other than those outlined below are deemed necessary in the context of this Stage II AA. The outlined mitigation measures and ecological supervision and monitoring will prevent impacts on the River Dodder which would be seen as the pathway for potential impacts on European sites. **Construction Phase Mitigation** • *A project ecologist will be appointed to oversee all works.* • *A preconstruction inspection for mammals Including Otter (Annex II & IV of the Habitats Directive) will be carried out.* • *Local watercourses (River Dodder), the onsite pond and drains will be protected from dust, silt and surface water throughout the works.* • *Local silt traps established throughout site.* • *Mitigation measures on site include dust control, stockpiling away from watercourse and drains* • *Stockpiling of loose materials will be kept to a minimum of 40m from watercourses, ponds and drains.* • *Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses.* • *Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches or the watercourse, excavations and other locations where it may cause pollution.* • *Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations, including the attenuation tank during construction, that require pumping will not directly discharge to the stream. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality.* • *Fuel, oil and chemical storage will be sited within a bunded area. A risk based approach will be taken.* • *During the construction works silt traps will be put in place in the vicinity of all runoff channels of the river to prevent sediment entering the watercourse.* • *Petrochemical interception and bunds in refuelling area* • *On-site inspections to be carried out by project ecologist.* • *Maintenance of any drainage structures (e.g. de-silting operations) will not result in the release of contaminated water to the surface water network.* • *The diversion works will be undertaken before any other major works, minimizing the potential for down impact ie. Silting of the downstream watercourse.* • *No discharges will be to the watercourse or pond during works.* • *No abstraction of water from the pond or watercourse will be carried out during woks.* • *Silt traps established throughout site including a double silt fence between the site and the watercourse.*

Table 14. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation
		• *Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks to prevent silt entering the road network drainage.* • *The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained.* • *The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc.* • *Refuelling of vehicles/machinery will only be carried out within the bunded area.* • *The proposed basement will involve the excavation of approximately 13,000m^3 of material. Dewatering of excavations may be necessary. Appropriate monitoring of groundwater levels during site works will be undertaken. Standard construction phase filtering of surface water for suspended solids will be carried out. Unfiltered surface water discharges or runoff are not permitted from the site into the watercourse during the works. Any discharges will have twice daily turbidity, oxygen and pH monitoring (between 11am-1pm & 3.30pm-5pm). These monitoring records will be taken upstream of any discharge, within the discharge and downstream of the discharge. Daily photographic records of the sampling site to be sampled at each sampling event will be catalogued and held for inspection by the ecologist and Inland Fisheries Ireland. In the absence of discharges on- site monitoring will be carried out during working days at the inflow and outflow of the pond for the length of construction works on site. Sufficient baseline readings will be made prior to construction commencing to understand the existing turbidity on site particularly in the inflow area as this appeared turbid during the site visit. Anoxic sediments were also located in this area.* • *Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains and drainage ditches.* • *Abstraction of water from watercourses/ponds will not to be permitted.* • *Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis. Booms will be placed "ready to be deployed" proximate to any risk areas identified by the ecologist.* • *All site personnel will be trained in the importance of good environmental practices including reporting to the site manager when pollution, or the potential for pollution, is suspected. All persons working on-site will receive work specific induction in relation to surface water management and run off controls. Daily environmental toolbox talks / briefing sessions will be conducted to outline the relevant environmental control measures and to identify any environment risk areas/works.* • *Ecological supervision will be required during construction works stages to ensure works do not result in surface water runoff impacting on adjacent habitats including the pond and drainage networks. Silt interception measures will be put in place to ensure that the watercourses are not impacted during works and in particular during the site clearance and reprofiling stages. Landscaping of the areas of the site proximate to the watercourse/pond will take place immediately following any re-profiling where possible, to act as a buffer to protect the watercourse.* • *Materials, plant and equipment shall be stored in the proposed site compound location;*

Table 14. Mitigation Measures.

Sensitive Receptors	Potential Impacts	Mitigation
		• *Plant and equipment will not be parked within 50m of the watercourse at the end of the working day; Hazardous liquid materials or materials with potential to generate run-off shall not be stored within 50m of the watercourse.* • *Oils, fuel and other potential hazardous liquid materials will be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater;* • *Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages;* • *Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use. They will not be stored within 50m of the watercourse.* • *Drip trays will be turned upside down if not in use to prevent the collection of rainwater;* • *Waters collected in drip trays will be assessed prior to discharge. If classified as contaminated, they shall be disposed by a permitted waste contractor in accordance with current waste management legal and regulatory requirements;* • *Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips;* • *No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction;* • *Re-fuelling of machinery, plant or equipment will be carried out in the site compound as per the appointed Construction Contractor re-fuelling controls;* • *The appointed Construction Contractor EERP will be implemented in the event of a material spillage;* • *All persons working will receive work specific induction in relation to material storage arrangements and remedial action to be taken in the event of an accidental spillage. Daily environmental toolbox talks / briefing sessions will be conducted for all persons working to outline the relevant environmental control measures and to identify any environment risk areas/works.* • *Consultation with Inland Fisheries Ireland will be carried out pre and post works and will be led by the project ecologist.* • *No entry of solids to the associated stream or drainage network during the connection of pipework to the public water system will take place through silt interception as outlined by the project ecologist.* • *Landscaping of the pond will be carried out to the satisfaction of IFI and the project ecologist.* • *Any works in the vicinity of the pond will be subject to approval of the project ecologist.* **Operational Phase Mitigation** • *A project ecologist will be appointed to oversee completion of all landscape and drainage works.* • *Petrochemical interception will be inspected by the project ecologist to ensure compliance with Water Pollution Acts.*

Table 14. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation
		• *Post Construction assessment/compliance with proposed lighting strategy* ***OCMP*** ***'Site Set-Up and Security*** *The Main Contractor will be required to submit a site layout plan that will detail the proposed location of the site compound. The Contractor will ensure that the site compound will be serviced as required and will be secured with appropriate fencing/hoarding. The site compound will be used as the primary location for the storage of materials, plant and equipment, site offices and worker welfare facilities. As Project Supervisor Construction Stage (PSCS), the Contractor will be responsible for site security and they are to ensure that the site and site compound are adequately secured at all times.* *As with the other construction activities that are being carried out within the Dublin City Council local authority area, activities associated with the construction compounds will be subject to restrictions to the nature and timing of operations so that they do not cause undue disturbance to neighbouring areas and communities. The site layout plan will also include the site perimeter and the proposed detail with regards the hoarding and gate system.'* ***'General Construction Approach*** ***Construction Working Space*** *Construction working space will be set out in the detailed construction management plan at compliance stage. Construction access routes, haul routes and delivery routes to the site are to be agreed with the Engineer/Employer's Representative in advance of works commencing onsite. Any road closures required will be submitted and approved in advance with the local authority. It is the responsibility of the Main Contractor to prepare and submit the road closure application to the local authority in advance of works commencing onsite.'* ***'Hoarding, Site Set-up and Formation of Site Access/Egress*** *The site area will be enclosed with hoarding details of which are to be agreed with DCC. Hoarding panels will be maintained and kept clean for the duration of the works. This will involve erecting hoarding around the proposed site perimeter in line with the finished development extents. The available site footprint will enable the Contractor to set up the site compound within the site boundary. The Contractor will be responsible for the security of the site.* *The Contractor will be required to:* *•Operate a Site Induction Process for all site staff;* *•Ensure all site staff shall have current 'Safe Pass' cards and appropriate PPE;* *•Install adequate site hoarding to the site boundary;* *•Maintain site security at all times;* *•Install access security in the form of turn-styles and gates for staff;* *•Separate public pedestrian access from construction vehicular traffic'* ***'Construction Noise, Dust and Vibration***

Table 14. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation
		The Main Contractor will be required to monitor noise, dust and vibration as will be outlined in the planning conditions. The Contractor will establish baselines for noise, dust and vibration in advance of works commencing onsite. As part of their detailed construction management plan, the Contractor will be required to clearly indicate how they plan on monitoring noise, dust and vibration throughout the course of the project. This will be especially critical in relation to the basement construction and associated piling works. The Contractor will also be required to clearly outline the mitigation measures they plan on putting in place to ensure any breaches in the baselines are mitigated. For more details please refer to the 'Outline Resource & Waste Management Plan 'prepared and included in the planning submission.' ***Outline Resource & Waste Management Plan*** *Prevention of Waste* *The primary effort therefore should be to engage in waste prevention and reduce the amount of waste generated in the first place i.e. minimise the resources needed to do the job. Prevention is financially advantageous as it reduces the purchase of construction materials and obviates the need to remove wastes from site. It is important to emphasise the potential for certain purchasing procedures to contribute to a reduction in excessive material wastage on site. Examples include:* *•ensuring materials are ordered on an "as needed" basis to prevent over supply to site;* *•purchasing construction materials in shape, dimensions and form that minimises the creation of excessive scrap waste on site;* *•ensuring correct storage and handling of construction materials to minimise generation of damaged materials/waste, e.g. keeping deliveries packaged until they are ready to be used;* *•ensuring correct sequencing of operations; and* *•assigning individual responsibility (through appropriate contractual arrangements) to sub-contractors for the purchase of raw materials and for the management of wastes arising from their activities, thereby ensuring that available resources are not expended in an extravagant manner at the expense of the main contractor.* ***Reuse of Waste*** *Waste material that is generated will be reused on site or salvaged for subsequent reuse to the greatest extent possible and disposal should only be considered as a last resort. Initiatives will be put in place to maximise the efficient use/reuse of materials.* ***Recycling of Waste*** *There are a number of established markets available for the beneficial use of C&D waste:* *•waste timber can be:* *•recycled as shuttering or hoarding, or* *•sent for reprocessing as medium density fibreboard;* *•waste concrete can be utilised as fill material for roads or in the manufacture of new concrete when arising at source; and* *•in addition, the technology for the segregation and recovery of stone, for example, is well established, readily accessible and there is a large reuse market for aggregates as fill for roads and other construction projects.*

Table 14. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation
		Overall Management of Construction and Demolition Waste *Waste minimisation, reuse and recycling can best be managed operationally by nominating a "Construction and Demolition Waste Manager" to take responsibility for all aspects of waste management at the different stages of the Project.* *This C&D Waste Manager may well be a number of different individuals over the life-cycle of the Project, but in general is intended to be a reliable person chosen from within the Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project Waste Management Plan are delivered and who is assigned the requisite authority to secure achievement of this purpose.* *Specifically, the function of the C&D Waste Manager will be to communicate effectively with colleagues in relation to the aims and objectives for waste management on the Project. The primary responsibility for delivery of the objectives of the Waste Management Plan will fall upon the C&D Waste Manager designated at the demolition/ construction stage. A key objective for the C&D Waste Manager should be to maintain accurate records on the quantities of waste/ surpluses arising and the real cost (including purchase) associated with waste generation and management.* *The preparation, application and documentation of a Project Waste Management Plan should enable all parties -including contractors, designers and competent authorities -to learn from the systematic implementation and assessment of best practice, particularly through the recording of summary information on performance outcomes.* ***'Disposal of Water, Wastewater and Sewage*** *'All site facilities during construction will be located entirely within the site. The facilities will include canteen, toilet block and drying room for all staff/workers. These facilities will be connected to the Local Authority sewage system with local authority approval.'* ***'Water Disposal*** *Throughout the works, all surface water (water from excavations etc.) will be pumped to a holding tank on site. From here the water will be pumped to a series of settlement tanks. These tanks will act as primary and secondary settlement. The settlement tanks will be of sufficient number and size to allow the necessary retention time for solids to settle. The discharge water from the final tank will be routed to the existing surface water system with approval from the local authority. Visual checks of the pumping and settlement system will be carried out on a routine basis.'* ***'Control of Fuels and Lubricants*** *In order to provide fuel to the relevant items of plant on site, a certified double skinned metal fuel tank with integrated pump, delivery hose, meter, filter and locking mechanism will be situated in a secure area on the construction site. It will be situated within a bund. This tank will be certified for lifting when full. Sand piles and emergency clean up spill kits will be readily*

Table 14. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Mitigation
		available in the event of a fuel spill. A hazardous bin will also be available to contain any spent sand or soak pads. New metal gerry cans with proper pouring nozzles will be used to move fuel around the site for the purposes of refuelling items of small plant on site. Drip trays will be used under items of small plant at all times. Any waste oils etc. contained in the drip trays or the bunded area will be emptied into a waste oil drum, which will be stored within the bund. Metal gerry cans and any other items of fuel containers will be stored in certified metal bunded cabinets. Any gas bottles will be stored in a caged area at a secure location on the site. All will be properly secured at point of work. ***Air Quality*** *There is the potential for a number of emissions to the atmosphere during the bulk excavation/demolition stage of the project. In particular, activities may generate quantities of dust. Construction vehicles, generators etc., will also give rise to some exhaust emissions. Vehicular movements to and from the site will make use of existing roads. It is estimated that peak construction HGV movements will be 6HGV'sper hour. Considering the existing traffic levels in the area, the likely air quality impact associated with construction traffic is not significant. A dust minimisation plan will be formulated for the bulk excavation/demolition and construction phase of the project, as construction activities are likely to generate dust emissions. The potential for dust to be emitted depends on the type of activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. The majority of any dust produced will be deposited close to the potential source and any impacts from dust deposition will typically be within several hundred metres of the construction area. In order to ensure that no dust nuisance occurs, a series of measures will be implemented.* *Roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface. Furthermore, any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions. Vehicles delivering material with dust potential both on and off the site shall be enclosed or covered with tarpaulin at all times to ensure no potential for dust emissions. All vehicles exiting the site shall make use of a wheel wash facility, if required, prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary. Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting or sprays shall be used as required particularly dusty activities are necessary during dry or windy periods. At all times, the procedures put in place will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, satisfactory procedures will be implemented to rectify the problem. The dust minimisation plan shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practise and procedures.'*

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

The robust series of mitigation measures that were identified in Table 14 above will be carried out. This will ensure that water entering the River Dodder 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 impacts on the proximate Natura 2000 sites or their features of interest. However, given the proximity of the pond to the works which directly leads to the Natura 2000 sites, it should be noted that the ecological supervision on site will be implemented early, during 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 the River Dodder, 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. Given that the proposed development is within an urban and existing relatively high disturbance environment it would not be expected that works on site would impact on birds on adjacent sites.

Further, following the mitigation measures outlined above, no significant impacts on the Qualifying Interests or Special Conservation 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, North Bull Island SPA and North-West Irish Sea 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 “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.

Conclusion

In a strict application of the precautionary principle, the AA Screening concluded that significant effects on South Dublin Bay SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA and North-West Irish Sea SPA cannot be ruled out 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 Dodder and into the River Liffey, with possible downstream impacts from the project during the construction, landscaping and drainage works.

As a result, there is potential for downstream impacts on European Sites from the project during site clearance, enabling, construction, landscaping and drainage works. In the absence of mitigation measures, it is considered that significant effects on the qualifying interests of European sites are likely.

For this reason, this 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 Sites. All other European sites were screened out at initial screening.

Construction on this site will create localised light and noise disturbance that will not impact on Natura 2000 sites. Mitigation measures will 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[18].

Following the implementation of the mitigation measures outlined, the construction and presence of this development would not be deemed to have a significant impact on the integrity of European sites. No significant impacts are likely on European sites, alone in combination with other plans and projects based on the implementation of standard construction phase 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 European sites, their features of interest or conservation objectives. The proposed project will not will adversely affect the integrity of European sites.

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Appendix I Winter Bird Surveys 2023-2024

Terenure College, Dublin, Winter Bird Surveys 2023-2024

1. Introduction

Between November 2023 and March 2024 9 Winter Bird Surveys were undertaken at grounds at Terenure College, South County Dublin by Hugh Delaney, a freelance Ecologist (Birds primarily) Hugh has extensive experience surveying numerous sites with ecological consultancies over 12+ years. Hugh is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in its environs and elsewhere in the country going back over 35 years.

2. Winter Bird Survey Methodology

Winter bird surveys are conducted from soon after sunrise until late in the afternoon, or alternatively started later in the day until sunset, a survey period is a minimum of six hours, the site is monitored throughout the survey period and all bird species utilizing the site recorded, including species flying through site area overhead. Checks are also made on suitable habitat nearby or adjacent to the site for comparative purposes and to monitor any interchange of birds between sites. Target species (species of more special interest) utilizing the site are mapped and estimates of the time these species frequented the site are recorded.

Site Location

Fig. 1. Terenure College Bird Survey area (encircled in red), the site was divided into the following areas for the purposes of the surveys –

1. Primary survey site.
2. Main playing fields area.
3. Secondary playing fields area.
4. Terenure College Rugby grounds.
5. VEC Football Club grounds.
6. Lakelands area (encircled in blue).

3. Site Description

The site is a parkland-type area situated in suburban south Dublin, at the east side of the site Terenure College and grounds are located and adjacent to this are large areas of playing fields bordered at the boundaries by large trees. A significant feature of the site is the 'Lakelands' area which features a slow-moving water body that moves from west to east via an underground channel arising from the west side that exists the site via a channel underground at the east side passing through the north side of the site, it is bordered also by large trees (notably mainly Holm Oak on the north side) and contains some tree covered islets. The survey site itself (1) (Fig 1) at the northwest corner of the survey area of Terenure College is part of the playing field areas and is bordered by trees at its outer boundaries. Dividing the survey site area and Terenure Rugby Club to the east is an artificial pitch area.
Significant adjacent sites of interest to the survey area are VEC Football club immediately to the east and Bushy Park to the south of the survey area.

4. Specific site survey methodology

The site and areas within were comprehensively surveyed during the surveys, twice monthly with an early visit and a later visit made alternately, all areas including the survey site (1) were checked at least hourly during the survey periods, by way of a cyclical check around the site on foot and bicycle (also large portion of site area is viewable simultaneously at the west side of Lakelands). In addition, several dedicated specific counts of the Lakelands area were completed during surveys in order to document the waterbird species numbers present in this area. Outlying sites adjacent to the survey area were also checked during surveys, these specifically being VEC football grounds to the east and Bushy Park to the south. The survey area playing field areas were checked on all surveys specifically for evidence of Brent Goose scat, these being an excellent indicator of any visitations on-site by the species.

5. Survey Results

a) November 30th, 2023

Sunrise- 08.15hrs/Sunset 16.12hrs. Weather – Wind Northwest F4, Cloud 4/8, Light showers, 5c, Excellent visibility. On-site 10.00hrs – 16.00hrs.
Species recorded – Brent Goose (flyover only), Mallard, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Herring Gull, Feral Pigeon, Woodpigeon, Pied Wagtail, Grey Wagtail, Robin, Song Thrush, Mistle Thrush, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch.
10.00hrs-12.00hrs – Survey commenced at the survey site (1) north of the Terenure College, grass sward length here was estimated at 20+cm in areas and appeared to be no longer being tended (i.e. mown to a playing field standard like the other playing field areas), the other playing field areas were of normal short-cropped playing field standard. The longer grass length here was deemed not to be conducive to foraging species such as Brent Geese, Gull species or wader species (only possible exception being perhaps Curlew). No species recorded. A flock of Brent Geese (<19) were observed flying east over the north end of Area 1 at 10.36hrs (height 20m) and were headed towards the VEC FC site (Brent were later recorded there), the birds not landing into the site. 10.44hrs another flock of Brent Geese (<70) followed the same flight path over area 1 and also appeared to land into VEC FC. Starling (<70) foraging in area 1 were the only species noted foraging in this area. At area 2 Black-headed Gulls roosting and foraging peaked at 24 at 11.40hrs, with single Herring Gull and Common Gull also noted. At area 3 peak numbers of Black-headed Gull (<42) and Common Gull (<1) were noted foraging at 11.37hrs. A single Common Gull was observed foraging in area 4 (Terenure Rugby Grounds) at 11.50rs.

A waterbird survey of the Lakelands from 10.50-11.10hrs recorded – Mallard (13), Little Grebe (<3), Little Egret (<1), Grey Heron (<1), Moorhen (<18) and Coot (<1).
12.00hrs-16.00hrs – At VEC FC Brent Geese (<29) were foraging at 12.10hrs and all 29 were still present there at 14.40hrs. At area 1 Starling (<40) and Goldfinch (<6) were noted foraging during the afternoon, no other species foraging on-site. No species recorded foraging at area 4 during the

afternoon. At area 2 foraging Gull numbers peaked at 13.55hrs with Black-headed Gull (<24), Common Gull (<3) and Herring Gull (<1) noted. At area 3 Gull numbers peaked at 13.45hrs with Black-headed Gull (<28) and Common Gull (<1) present.

A waterbird survey of the Lakelands from 14.10-14.30hrs recorded – Mallard (14), Little Grebe (<3), Little Egret (<1), Moorhen (<16) and Coot (<1).

Passerine species recorded around the site were again typical of a suburban Dublin parkland, Pied Wagtail (<2) and Mistle Thrush (<2) recorded foraging on the playing fields, Grey Wagtail (<1) at the Lakelands, the woodland around the lakelands was again the most productive area for passerine species, four Tit species, Goldcrest (<2), Goldfinch (<12), Chaffinch (<5) and Greenfinch (<2) present in this area.
A check of all the suitable playing fields found did not locate Brent Goose scat.

b) December 8th, 2023

Sunrise- 08.26hrs/Sunset 16.07hrs. Weather – Wind Southwest F3, Cloud 6/8, Dry, 9c, Excellent visibility. On-site 08.30hrs – 14.30hrs.
Species recorded – Brent Goose (flyover & offsite only), Mallard, Tufted Duck, Little Grebe, Little Egret, Grey Heron, Sparrowhawk, Moorhen, Coot, Black-headed Gull, Common Gull, Herring Gull, Feral Pigeon, Woodpigeon, Pied Wagtail, Grey Wagtail, Robin, Song Thrush, Mistle Thrush, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin.
08.30hrs-12.00hrs – Survey commenced at area 3 and onwards to area 1, area 4, and area 2 etc. At area 3 peak counts of foraging Gulls were Black-headed Gull (<33), Herring Gull (<5) and Common Gull (<8) recorded at 10.05hrs, averaging about 20 Black-headed Gull during the remainder of the morning. At area 1 a flock of Brent Geese (<11) were observed flying northwest over the middle of the site at 09.10hrs (height 25m), Starling (<25), Goldfinch (<10) and Meadow Pipit (<2) were the only species noted foraging here during the morning. Common Gull (<3) and Black-headed Gull (<4) were noted in area 4 at 10.45hrs only. At area 2 Gull numbers peaked at 10.15hrs with Black-headed Gull (<58), Common Gull (<10) and Herring Gull (<5) noted foraging. At VEC FC Brent Geese (<120) were noted foraging at 11.30hrs (off-site).

A waterbird survey of the Lakelands from 10.00-10.30hrs recorded – Mallard (22), Tufted Duck (<2), Little Grebe (<3), Little Egret (<1), Grey Heron (<2), Moorhen (<15), Coot (<2) and Kingfisher (<1).
12.00hrs-14.30hrs – At VEC FC the Brent Geese flock (<120) were foraging at 12.45hrs, and not recorded thereafter. At area 1 Starling (<30) and Goldfinch (<15) were noted foraging during the afternoon, no other species foraging on-site. No species recorded foraging at area 4 during the afternoon. At area 2 foraging Gull numbers peaked at 12.15hrs with Black-headed Gull (<45), Common Gull (<6) and Herring Gull (<12) noted. At area 3 Gull numbers peaked at 12.50hrs with Black-headed Gull (<30) and Herring Gull (<3) present.

A waterbird survey of the Lakelands from 13.15-13.45hrs recorded – Mallard (17), Tufted Duck (<2), Little Grebe (<3), Little Egret (<1), Moorhen (<14) and Coot (<2).

Mistle Thrush (<2) recorded foraging on the playing fields at area 3 and 2, around the lakelands four Tit species, Goldcrest (<3), Goldfinch (<15), Chaffinch (<10) and Siskin (<5) were present in this area. A Sparrowhawk was observed hunting at the Lakelands at 12.20hrs.

A check of all the suitable playing fields found did not locate Brent Goose scat.

c) December 19th, 2023

Sunrise- 08.36hrs/Sunset 16.07hrs. Weather – Wind West F2, Cloud 3/8, Dry, 5c, Excellent visibility. On-site 09.30hrs – 15.30hrs.

Species recorded –Brent Geese (flyover only), Mute Swan, Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Mediterranean Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Redwing, Mistle Thrush, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin.
09.30hrs-12.00hrs – Surveys commenced on arrival at area 3 at entrance, and onwards to area 1, Lakelands, area 4 etc. At area 3 foraging gull numbers peaked at Black-headed Gull (<42), Common Gull (<6) and Herring Gull (<5) at 10.52hrs. At area 1 no foraging species were noted during morning, Starling (<20), Redwing (<5) and Goldfinch (<12) noted around the site. Common Gull (<3) were noted foraging in area 1 intermittently during morning. At Area 2 a peak morning count of Black-headed Gull (<54), Mediterranean Gull (<2), Herring Gull (<9) and Common Gull (<16) were noted roosting and foraging at 10.35hrs, also Redwing (<25) noted foraging around the area. No Brent Geese noted in VEC FC or Bushy Park. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.15-09.45hrs recorded – Mute Swan (<1), Coot (<3), Mallard (26), Tufted Duck (<3), Little Grebe (<4), Moorhen (<17) and Grey Heron (<1).
12.00hrs-15.30hrs – At area 1 Brent Geese (<13) were noted flying northwest over the north end at 13.10hrs and four flew east at 15.05hrs (height both sightings was 20m). At area 4 Black-headed Gull (<3) and Common Gull (<1) were noted foraging intermittently during the afternoon. At area 2 peak counts for foraging Gull species were at 13.35hrs with Black-headed Gull (<64) and Common Gull (<11) at 14.25hrs, at other times averaging 30-40 Black-headed Gulls. At area 3 Black-headed Gulls (<27), Mediterranean Gull (<2) and Herring Gull (<4) were noted at 13.50hrs. Redwing (<25) noted feeding across area 3 and 2 during the afternoon.
At the VEC FC Brent Geese (<30) were noted foraging from 13.50hrs-15.20hrs.
A waterbird survey of the Lakelands from 14.30-14.50hrs recorded – Mute Swan (<1), Coot (<3), Mallard (19), Tufted Duck (<3), Little Grebe (<4), Moorhen (<19) and Grey Heron (<1).

No Brent Goose scat recorded on any of the playing fields.

d) January 6th, 2024

Sunrise- 08.39hrs/Sunset 16.23hrs. Weather – Wind West F3, Cloud 1/8, Dry, 3c, Good visibility. On-site 08.45hrs – 14.45hrs.
Species recorded – Mallard, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Oystercatcher, Black-headed Gull, Common Gull, Herring Gull, Feral Pigeon, Woodpigeon, Dunnock, Robin, Mistle Thrush, Fieldfare, Blackbird, Wren, Coal Tit, Great Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Bullfinch.
08.45hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 10.00hrs with Black-headed Gull (<65) and Common Gull (<3) noted foraging in the area, averaging 50 Black-headed Gull feeding in the area at other times. At area 1 no foraging species were noted during morning, small numbers of Black-headed Gull (<5) and Herring Gull (<3) noted passing over the site. In area 4 Black-headed Gull (<2), Common Gull (<1) and a Fieldfare were noted foraging during the morning. At Area 2 a peak morning count of Black-headed Gull (<43), Herring Gull (<1) and Common Gull (<1) were noted roosting and foraging at 09.27hrs. A pair Oystercatcher flew southwest over the Lakelands at 09.07hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat. No Brent noted in the VEC FC.

A waterbird survey of the Lakelands from 09.15-09.45hrs recorded – Mallard (<14), Little Grebe (<4), Moorhen (<20), Coot (<1), Little Egret (<1) and Grey Heron (<1).
12.00hrs-14.45hrs – No target species noted at area 1 during afternoon, with occasional flyover Black-headed and Herring Gulls only. No species were recorded foraging in area 4. At area 2 a peak of Black-headed Gull (<50), Herring Gull (<1) and Common Gull (<7) were noted at 12.25hrs. At area 3 Gull

numbers peaked at 12.30hrs with Black-headed Gull (<14), Herring Gull (<1) and Common Gull (<1) present.
A waterbird survey of the Lakelands from 13.15-13.45hrs recorded – Mallard (<9), Little Grebe (<4), Moorhen (<17), Coot (<1) and Grey Heron (<1).

No sightings of target species in VEC FC (5) or Bushy Park.

e) January 26th, 2024

Sunrise- 08.19hrs/Sunset 16.55hrs. Weather – Wind Southwest F2, Cloud 2/8, Dry, 4c, Excellent visibility. On-site 10.30hrs – 16.30hrs.
Species recorded –Brent Goose (off-site), Mute Swan, Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Mediterranean Gull, Herring Gull, Woodpigeon, Collared Dove, Pied Wagtail, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Redwing, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Bullfinch.
10.30hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 11.42hrs with Black-headed Gull (<28), Herring Gull (<3) and Mediterranean Gull (<3) noted foraging in the area. At area 1 no foraging species were noted during morning, Redwing (<5), Goldfinch (<8) and occasional Black-headed and Herring Gull noted passing over only. Black-headed Gull (<6) and Common Gull (<3) were noted foraging in area 4 intermittently during the morning. At Area 2 a peak morning count of Black-headed Gull (<25), Herring Gull (<17) and Common Gull (<5) were noted roosting and foraging at 11.15hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat. No Brent Geese were noted at VEC FC or Bushy Park.

A waterbird survey of the Lakelands from 11.15-11.45hrs recorded – Mute Swan (<1), Coot (<4), Mallard (<20), Tufted Duck (<2), Little Grebe (<3), Moorhen (<14) and Grey Heron (<2).
12.00hrs-16.30hrs – No target species noted at area 1 during afternoon, with occasional flyover Black-headed and Herring Gull noted passing over only (<10 each in total). No species were recorded foraging in area 4. At area 2 Gulls were noted foraging and roosting throughout the afternoon with a peak of Black-headed Gull (<61), Herring Gull (<10), Common Gull (<6) and Mediterranean Gull (<4) noted at 14.00hrs. At area 3 a peak count of Black-headed Gull (<15) and Common Gull (<6) was made at 12.55hrs. At the VEC FC Brent Geese (<76) were noted foraging from 13.05hrs to 15.15hrs.
A waterbird survey of the Lakelands from 14.45-15.15hrs recorded – Mute Swan (<1), Coot (<4), Mallard (<28), Tufted Duck (<2), Little Grebe (<3) and Moorhen (<15).

Mistle Thrush (<4), Redwing (<20) and Pied Wagtail (<3) were recorded foraging on the playing fields (2).

No Brent Goose scat recorded on any of the playing fields.

f) February 7th, 2024

Sunrise- 07.59hrs/Sunset 17.19hrs. Weather – Wind Northwest F1, Cloud 4/8, Dry, 2c, Excellent visibility. On-site 08.15hrs – 14.30hrs.
Species recorded –Brent Goose (flyover & offsite only), Mute Swan, Mallard, Tufted Duck, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Black-headed Gull, Mediterranean Gull, Common Gull, Herring Gull, Lesser black-backed Gull, Woodpigeon, Pied Wagtail, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Redwing, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Treecreeper, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin.
08.15hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 10.32hrs with Black-headed Gull (<56), Mediterranean Gull (<1), Herring Gull (<8) and Common Gull (<11) noted foraging and roosting in the area. At area 1 no foraging species were noted, a flock of Brent Geese (<45) flew northwest over the north end at 10.10hrs. Black-headed Gull (<5) and Common Gull (<2) were noted foraging in

area 4 during the morning. At Area 2 a peak morning count of Black-headed Gull (<48), Herring Gull (<11), Lesser black-backed Gull (<1), Common Gull (<13) and Mediterranean Gull (<3) were noted roosting and foraging at 11.35hrs. At the VEC FC a foraging flock of Brent Geese (<34) were noted at 09.50hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 10.30-11.55hrs recorded – Mute Swan (<2), Coot (<5), Mallard (<21), Tufted Duck (<6), Little Grebe (<3), Moorhen (<18), Little Egret (<1) and Grey Heron (<2).

12.00hrs-14.30hrs – At area 1 Brent Geese (<4) flew east over the north end at 13.35hrs (height 20m). No species were recorded foraging in area 4. At area 2 Gulls were noted foraging and roosting throughout the afternoon with a peak of Black-headed Gull (<35), Herring Gull (<15) and Common Gull (<6) noted at 12.20hrs. At area 3 small numbers of Black-headed Gull (<15) were noted foraging the afternoon. At VEC FC grounds a flock of Brent Geese (<46) were noted foraging at 14.05hrs.

A waterbird survey of the Lakelands from 13.00-13.25hrs recorded – Mute Swan (<2), Coot (<5), Mallard (<23), Tufted Duck (<6), Little Grebe (<4), Moorhen (<15) and Grey Heron (<1).

Pied Wagtail (<1), Mistle Thrush (<4) and Redwing (<15) were recorded foraging on the playing fields, in areas 2 and 3.

g) February 23rd, 2024

Sunrise- 07.27hrs/Sunset 17.50hrs. Weather – Wind West F2, Cloud 5/8, Dry, 5c, Excellent visibility. On-site 11.00hrs – 17.00hrs.

Species recorded – Brent Goose (flyover & offsite), Mute Swan, Mallard, Tufted Duck, Little Grebe, Grey Heron, Sparrowhawk, Moorhen, Coot, Black-headed Gull, Common Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Treecreeper, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Greenfinch, Goldfinch.

11.00hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 11.05hrs with Black-headed Gull (<39), Herring Gull (<2) and Common Gull (<1) noted foraging in the area. At area 1 Starling (<35), Goldfinch (<12) and Woodpigeon (<4) noted foraging only. At Area 4 no foraging species were recorded. At area 2 a peak morning count of Black-headed Gull (<32), Herring Gull (6) and Common Gull (<5) were noted roosting and foraging at 11.45hrs. Sparrowhawk noted soaring over the east end of the Lakelands at 11.39hrs.

12.00hrs-17.00hrs At area 1 a flock of Brent Geese (<30) passed east over the middle of the site at 13.05hrs (height 20m). Common Gull (<1) and Black-headed Gull (<4) noted foraging in area 4 intermittently during the afternoon. At area 2 a peak of Black-headed Gull (<36), Herring Gull (<14) and Common Gull (<9) were noted at 14.35hrs. At area 3 Black-headed Gull (<29), Common Gull (<5) and Herring Gull (<3) foraging at 13.10hrs was the peak count of foraging Gulls in this area. At the VEC FC Brent Geese (<180) were noted foraging from 13.07hrs until 14.40hrs.

A waterbird survey of the Lakelands from 13.30-14.00hrs recorded – Mute Swan (<1), Coot (<3), Mallard (<17), Tufted Duck (<4), Little Grebe (<2), Moorhen (<11) and Grey Heron (<2).

No Brent Goose scat recorded on the any of the playing fields.

h) March 8th, 2024

Sunrise- 06.55hrs/Sunset 18.17hrs. Weather – Wind East F2, Cloud 7/8, Dry, 7c, Excellent visibility. On-site 07.30hrs – 14.30hrs.

Species recorded – Brent Goose (Off-site), Mallard, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Mediterranean Gull, Common Gull, Herring Gull, Feral Pigeon, Woodpigeon, Kingfisher, Pied Wagtail, Dunnock, Robin, Mistle Thrush, Redwing, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Treecreeper, Magpie, Jackdaw, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch, Bullfinch.

07.30hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 09.12hrs with Black-headed Gull (<95) ,Common Gull (<9) and Mediterranean Gull (<1) noted foraging in the area. At area's 1 & 4 no foraging species were noted. At Area 2 a peak morning count of Black-headed Gull (<36), Mediterranean Gull (<1), Herring Gull (2) and Common Gull (<68) were noted roosting and foraging at 09.20hrs. At the VEC FC Brent Geese (<23) briefly landed into the site from 08.53-09.00hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.35-09.55hrs recorded – Mallard (<10), Little Grebe (<2), Moorhen (<13), Coot (<1), Kingfisher (<1 at west end) and Grey Heron (<1).
12.00hrs-14.30hrs – Jackdaw (<28) were the only species recorded foraging in field area at area 1. Black-headed Gull (<5) noted foraging in area 4 intermittently during the afternoon. At area 2 no foraging species were recorded as fields were in use throughout. At area 3 Black-headed Gull (<66) and Common gull (<5) foraging at 12.20hrs was the peak count of foraging birds in this area.

A waterbird survey of the Lakelands from 13.30-13.55hrs recorded – Mallard (<12), Little Grebe (<2), Moorhen (<11), Coot (<1) and Grey Heron (<1).

No Brent Geese noted on checks on VEC FC or Bushy Park.

i) March 22nd, 2024

Sunrise- 06.22hrs/Sunset 18.43hrs. Weather – Wind West F4, Cloud 7/8, Dry, 10c, Excellent visibility. On-site 10.45hrs – 16.45hrs.
Species recorded –Mallard, Little Grebe, Grey Heron, Moorhen, Coot, Herring Gull, Lesser black-backed Gull, Feral Pigeon, Woodpigeon, Robin, Mistle Thrush, Blackbird, Blackcap, Chiffchaff, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Treecreeper, Magpie, Jackdaw, Hooded Crow, Chaffinch, Goldfinch, Greenfinch, Siskin, Bullfinch.
10.45hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 no foraging were noted. At area 1 no foraging species were noted, Herring Gull (<3) noted passing over the site only. No species were noted foraging in area 4 or 2 during the morning (all pitches in use by school). Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat. No Brent noted in VEC FC or Bushy Park.

A waterbird survey of the Lakelands from 11.15-11.40hrs recorded – Mallard (<8), Little Grebe (<2), Moorhen (<10), Coot (<1) and Grey Heron (<1). One Chiffchaff in song at the east end (migrant).
12.00hrs-16.45hrs – No species recorded foraging in field area at area 1. Gull species Black-headed Gull and Common Gull not recorded on-site appearing to have now departed the area for breeding grounds, Herring Gull (<10) noted perched on the school buildings only. Lesser-black-backed Gull (<2) noted intermittently at the Lakelands during the afternoon, no birds noted foraging at area 4, 2 or 3. No Brent recorded at the VEC FC or Bushy Park sites.

A waterbird survey of the Lakelands from 13.15-13.40hrs recorded – Mallard (<9), Little Grebe (<2 Displaying), Moorhen (<9), Coot (<1) and Grey Heron (<1). One Blackcap in song at the east end of the woodland(migrant).

No Brent Goose scat recorded on the any of the playing fields.

2. Comments and observations on survey results

In total 47 bird species were recorded over 9 surveys at the survey site area at Terenure College, Dublin, during the winter bird surveys in 2023-2024, Redwing is a red-listed species of conservation concern (per Birdwatch Ireland's species of conservation concern 2020-2026) and was recorded on-site, (averaging 15-25) foraging in the wider survey area. Species amber-listed as wintering species of

conservation concern were Mute Swan, Tufted Duck, Mallard, Coot, Black-headed Gull, Common Gull, Lesser black-backed Gull and Herring Gull.

Brent Geese were recorded foraging in the VEC Football Grounds adjacent to Terenure College on seven survey dates (29 on 30/11/23, 120 on 08/12/23, 30 on 19/12/23, 76 on 26/01/24, 46 on 07/02/24, 120 on 23/02/24 and 23 on 08/08/24), none were observed in Bushy Park. Similar again to the recording season 2022-2023 Brent Geese were not observed foraging in the Terenure College survey area, and no geese scat was found on-site, from experience surveying other sites it would appear between the high volume of public footfall on the site, combined with the very regular recreational use of the pitches, negates the visitation of Geese to the site. During surveys birds were noted passing over the site (all over the primary survey site -area 1, these birds are likely moving between outlying sites, including VEC FC).

Results suggest that the site is not an important ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's).

Terenure College, Dublin, Winter Bird Surveys 2022-2023

1) Introduction

Between November 2022 and March 2023 10 Winter Bird Surveys were undertaken at grounds at Terenure College, South County Dublin by Hugh Delaney, a freelance Ecologist (Birds primarily) Hugh has extensive experience surveying numerous sites with ecological consultancies over 12+ years. Hugh is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in its environs and elsewhere in the country going back over 35 years.

2) Winter Bird Survey Methodology

Winter bird surveys are conducted from soon after sunrise until late in the afternoon, or alternatively started later in the day until sunset, a survey period is a minimum of six hours, the site is monitored throughout the survey period and all bird species utilizing the site recorded, including species flying through site area overhead. Checks are also made on suitable habitat nearby or adjacent to the site for comparative purposes and to monitor any interchange of birds between sites. Target species (species of more special interest) utilizing the site are mapped and estimates of the time these species frequented the site are recorded.

Site Location

Fig. 1. Terenure College Bird Survey area (encircled in red), the site was divided into the following areas for the purposes of the surveys –
(1. Primary survey site.**2.** Main playing fields area.**3.** Secondary playing fields area.**4.** Terenure College Rugby grounds.**5.** VEC Football Club grounds.**6.** Lakelands area (encircled in blue)).

3) Site Description

The site is a parkland-type area situated in suburban south Dublin, at the east side of the site Terenure College and grounds are located and adjacent to this are large areas of playing fields bordered at the boundaries by large trees. A significant feature of the site is the 'Lakelands' area which features a slow-moving water body that moves from west to east via an underground channel arising from the west side that exists the site via a channel underground

at the east side passing through the north side of the site, it is bordered also by large trees (notably mainly Holm Oak on the north side) and contains some tree covered islets. The survey site itself (1) at the northwest corner of the survey area of Terenure College is part of the playing field areas and is bordered by trees at its outer boundaries. Dividing the survey site area and Terenure Rugby Club to the east is an artificial pitch area.
Significant adjacent sites of interest to the survey area are VEC Football club immediately to the east and Bushy Park to the south of the survey area.

4) Specific site survey methodology

The site and areas within were comprehensively surveyed during the surveys, twice monthly with an early visit and a later visit made alternately, all areas including the survey site (1) were checked at least hourly during the survey periods, by way of a cyclical check around the site on foot and bicycle (also large portion of site area is viewable simultaneously at the west side of Lakelands). In addition, several dedicated specific counts of the Lakelands area were completed during surveys in order to document the waterbird species numbers present in this area. Outlying sites adjacent to the survey area were also checked during surveys, these specifically being VEC football grounds to the east and Bushy Park to the south. The survey area playing field areas were checked on all surveys specifically for evidence of Brent Goose scat, these being an excellent indicator of any visitations on-site by the species.

5) Survey Results

a) November 11th, 2022

Sunrise- 07.42hrs/Sunset 16.35hrs. Weather – Wind South F4 decreasing to F2, Cloud 6/8, Dry, 14c, Excellent visibility. On-site 10.00hrs – 16.15hrs.
Species recorded – Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Herring Gull, Kittiwake, Woodpigeon, Grey Wagtail, Robin, Mistle Thrush, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch.
10.00hrs-12.00hrs – Survey commenced at the survey site (1) north of the Terenure College, grass sward length here was estimated at 15+cm in areas and appeared to be no longer being tended (i.e. mown to a playing field standard like the other playing field areas), the other playing field areas were of normal short-cropped playing field standard. The longer grass length here was deemed not be conducive to foraging species such as Brent Geese, Gull species or wader species (only possible exception being perhaps Curlew). No species recorded. At area 2 a peak count of roosting gull species were of Black-headed Gull (<148), Herring Gull (<4), Common Gull (<4) and Kittiwake (<1). At Area 3 Black-headed Gull (<9) were noted roosting. No species present in area 4.

A waterbird survey of the Lakelands from 11.15-11.35hrs recorded – Coot (<2), Mallard (<24), Tufted Duck (<6), Little Grebe (<3), Moorhen (<12) and Grey Heron (<2).
12.00hrs-16.15hrs – At 12.20hrs Black-headed Gull (<190), Herring Gull (<39) and Common Gull (<6) were noted roosting on area 2. This was the peak count of roosting gull species recorded during the afternoon with lower numbers recorded thereafter, at 13.40hrs Black-headed Gull (<68), Herring Gull (<4) and Common Gull (<2) recorded at area 2, at area 3 Black-headed Gulls roosting peaked at 14 at 13.30hrs, with 4 recorded at area 4 at 14.05hrs. No species noted foraging at area 1.
A waterbird survey of the Lakelands from 13.30-13.50hrs recorded – Coot (<3), Mallard (<32), Tufted Duck (<6), Little Grebe (<3), Moorhen (<13), and Grey Heron (<1).

Passerine species recorded around the site were typical of a suburban Dublin parkland, Mistle Thrush (<4) recorded foraging on the playing fields, Grey Wagtail (<1) at the Lakelands, the woodland around the lakelands was the most productive area for passerine species, four Tit species, Goldcrest (<3), Goldfinch (<10), Chaffinch (<8) present in this area.

No Brent Goose scat was recorded on the any of the playing fields.

b) November 21st, 2022

Sunrise- 08.00hrs/Sunset 16.20hrs. Weather – Wind Southeast F3 to F2 west later, Cloud 7/8, Light showers, 7c, Good visibility. On-site 08.15hrs – 14.15hrs.

Species recorded – Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch, Siskin.

08.15hrs-12.00hrs – Surveys commenced on arrival at area 3 at entrance, and onwards to area 1, Lakelands, etc. At area 3 a peak count of roosting and foraging gull species were of Black-headed Gull (<45), Herring Gull (<11) and Common Gull (<6) at 11.05hrs, smaller numbers averaging about 20 mainly Black-headed Gull were present here during the morning. At area 1 no foraging species were noted, with occasional flyover Gulls (mainly Herring Gull) noted passing over the site. No species noted foraging in area 4. At Area 3 a peak count of Black-headed Gull (<59), Herring Gull (<11) and Common Gull (<7) were noted roosting and foraging at 11.40hrs. VEC football grounds and Bushy Park were checked several times during the morning and no foraging species were noted on the playing fields at these sites.

A waterbird survey of the Lakelands from 09.15-09.30hrs recorded – Coot (<3), Mallard (<36), Tufted Duck (<6), Little Grebe (<4), Moorhen (<15) and Grey Heron (<2).

12.00hrs-14.15hrs – No target species noted at area 1, several Black-headed Gulls noted occasionally landing into the site briefly only. At area 4 Black-headed Gull (<2) and Common Gul (<3) noted foraging at 12.50hrs. At 13.35hrs Black-headed Gull (<72), Herring Gull (<14) and Common Gull (<9) were noted mainly roosting on area 2.

A waterbird survey of the Lakelands from 12.15-12.40hrs recorded – Coot (<3), Mallard (<28), Tufted Duck (<6), Little Grebe (<4), Moorhen (<12), and Grey Heron (<1).

Again, the habitats surrounding the Lakelands were most productive for passerines with a majority of species recorded here. Mistle Thrush (<6) recorded foraging on the playing fields.

No Brent Goose scat was recorded on the any of the playing fields.

c) December 4th, 2022

Sunrise- 08.21hrs/Sunset 16.08hrs. Weather – Wind East F2, Cloud 8/8, Occasional showers, 5c, Good visibility. On-site 10.00hrs – 16.00hrs.

Species recorded –Brent Goose (off-site only in VEC), Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Mediterranean Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Redwing, Mistle Thrush, Blackbird, Goldcrest, Wren, Great Tit, Coal Tit, Blue Tit, Long-tailed Tit, Treecreeper, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Linnet.

10.00hrs-12.00hrs – Surveys commenced on arrival at area 3 at entrance, and onwards to area 1, Lakelands, area 4 etc. At area 3 a peak count of roosting and foraging gull species were of Black-headed Gull (<31), Herring Gull (<17) and Common Gull (<2) at 11.42hrs, smaller numbers averaging about 15 mainly Black-headed Gull foraging at other times. At area 1 no foraging species were noted during morning. Black-headed Gull (<4) noted foraging in area 4 during morning. At Area 3 a peak morning count of Black-headed Gull (<28), Mediterranean Gull (<2), Herring Gull (<14) and Common Gull (<8) were noted roosting and foraging at 10.50hrs. AT 11.45hrs 27 Brent Geese were noted foraging in the grounds of the VEC Football grounds (viewed over wall from Greenlea Grove).

A waterbird survey of the Lakelands from 10.25-10.40hrs recorded – Coot (<5), Mallard (<41), Tufted Duck (<5), Little Grebe (<4), Moorhen (<18) and Grey Heron (<1).

12.00hrs-16.00hrs – The Brent Geese flock (<27) noted in the VEC were still noted present at 13.10hrs, not observed after this time, none observed on-site or flying over the survey area. No target species noted at area 1, occasional flyover Black-headed and Herring Gull noted passing over only. No species noted foraging in area 4 during the afternoon. At area 3 Gulls were noted foraging and roosting throughout the afternoon with peaks of Black-headed Gull

(<77 at 13.12hrs), Herring Gull (<14 at 13.56) and Common Gull (<16 at 14.34hrs). No Brent geese scat located on check of playing fields.
A waterbird survey of the Lakelands from 14.00-14.25hrs recorded – Coot (<5), Mallard (<35), Tufted Duck (<5), Little Grebe (<4) and Moorhen (<16).

Redwing (<12), Mistle Thrush (<6) and Pied Wagtail (<3) were recorded foraging on the playing fields.

No Brent Goose scat recorded on the any of the playing fields.

d) December 30th, 2022

Sunrise- 08.40hrs/Sunset 16.14hrs. Weather – Wind South F2 veering southwest, Cloud 6/8, Dry, 8c, Excellent visibility. On-site 08.15hrs – 14.15hrs.
Species recorded –Mute Swan, Mallard, Tufted Duck, Little Grebe, Grey Heron, Sparrowhawk, Moorhen, Coot, Black-headed Gull, Common Gull, Mediterranean Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Redwing, Mistle Thrush, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch, Siskin.
08.15hrs-12.00hrs – Surveys commenced on arrival at area 3 at entrance, and onwards to area 1, Lakelands, area 4 etc. Area 3 foraging gull numbers peaked at Black-headed Gull (<24) and Herring Gull (<4) at 08.25hrs. At area 1 no foraging species were noted during morning, a Sparrowhawk passed north over area 1 at 11.45hrs. Black-headed Gull (<2) were noted foraging in area 4 during morning. At Area 2 a peak morning count of Black-headed Gull (<66), Mediterranean Gull (<4), Herring Gull (<9) and Common Gull (<16) were noted roosting and foraging at 10.35hrs. Checks on VEC FC and Bushy Park returned with no significant foraging species noted. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.15-09.45hrs recorded – Mute Swan (<2), Coot (<4), Mallard (<30), Tufted Duck (<7), Little Grebe (<3), Moorhen (<11) and Grey Heron (<2).
12.00hrs-14.15hrs – No target species noted at area 1 during afternoon, occasional flyover Black-headed and Herring Gull noted passing over only. Common Gull (<3) noted foraging in area 4 from 12.20hrs-14.00hrs in the afternoon. At area 3 Gulls were noted foraging and roosting throughout the afternoon with a peak of Black-headed Gull (<24) and Herring Gull (<6) at 13.34hrs.
A waterbird survey of the Lakelands from 13.30-13.55hrs recorded – Mute Swan (<2), Coot (<4), Mallard (<28), Tufted Duck (<6), Little Grebe (<4) and Moorhen (<19).

Redwing (<8), Mistle Thrush (<4) and Pied Wagtail (<2) were recorded foraging on the playing fields. No sightings of target species in VEC or Bushy Park.

No Brent Goose scat recorded on the any of the playing fields.

e) January 11th, 2023

Sunrise- 08.35hrs/Sunset 16.30hrs. Weather – Wind Southwest F3, Cloud 7/8, Light showers, 6c, Good visibility. On-site 10.00hrs – 16.00hrs.
Species recorded –Mute Swan, Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Mediterranean Gull, Herring Gull, Woodpigeon, Kingfisher, Meadow Pipit, Grey Wagtail, Dunnock, Robin, Song Thrush, Redwing, Mistle Thrush, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch, Siskin, Bullfinch.
10.00hrs-12.00hrs – On route to survey site Brent Geese (<120) were noted foraging in the VEC Football grounds at 09.50hrs. Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 11.15hrs with Black-headed Gull (<27), Herring Gull (<5) and Common Gull (<3) noted foraging in the area. At area 1 no foraging species were noted during morning, small numbers

of Black-headed Gull (<5) noted passing over the site. No species were noted foraging in area 4 during the morning. At Area 2 a peak morning count of Black-headed Gull (<22), Mediterranean Gull (<1), Herring Gull (<7) and Common Gull (<5) were noted roosting and foraging at 10.45hrs. A flock of Brent Geese (<90) were noted to be still foraging in the VEC football grounds at 11.50hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.30-09.55hrs recorded – Mute Swan (<2), Coot (<6), Mallard (<26), Tufted Duck (<4), Little Grebe (<4), Moorhen (<19) and Grey Heron (<1).
12.00hrs-16.00hrs – No target species noted at area 1 during afternoon, with occasional flyover Black-headed, Common and Herring Gull noted passing over only. No species were recorded foraging in area 4. At area 2 Gulls were noted foraging and roosting throughout the afternoon with a peak of Black-headed Gull (<54), Herring Gull (<13) and Common Gull (<12) noted at 14.10hrs. A flock of Brent Geese (<90) in the VEC FC were last recorded at 14.45hrs. None recorded in the survey area and a check of the playing fields did not find any BG scat.
A waterbird survey of the Lakelands from 14.15-14.25hrs recorded – Mute Swan (<2), Coot (<6), Mallard (<22), Tufted Duck (<4), Little Grebe (<3), Moorhen (<15) and Kingfisher (<1 seen briefly at the east end of the Lakelands).

Redwing (<25), Mistle Thrush (<6) and Pied Wagtail (<2) were recorded foraging on the playing fields. No sightings of target species in VEC or Bushy Park.

No Brent Goose scat recorded on the any of the playing fields.

f) January 23rd, 2023

Sunrise- 08.23hrs/Sunset 16.50hrs. Weather – Wind North F1, Cloud 6/8, Dry, 8c, Excellent visibility. On-site 08.30hrs – 14.30hrs.
Species recorded –Mute Swan, Mallard, Tufted Duck, Little Grebe, Grey Heron, Moorhen, Coot, Black-headed Gull, Common Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Redwing, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Greenfinch, Siskin, Bullfinch.

08.30hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 10.10hrs with Black-headed Gull (<42), Herring Gull (<6) and Common Gull (<11) noted foraging in the area. At area 1 no foraging species were noted during morning, at 11.22hrs a flock of Brent Geese (<20) flew east over the north boundary of area 1 (height 25m), not located on-site or in VEC afterwards, small numbers of Black-headed Gull (<8) and Herring Gull (<10) were noted passing over the site. Black-headed Gull (<4) were noted foraging in area 4 during the morning. At Area 2 a peak morning count of Black-headed Gull (<45), Herring Gull (<13) and Common Gull (<15) were noted roosting and foraging at 09.40hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.15-09.45hrs recorded – Mute Swan (<2), Coot (<5), Mallard (<24), Tufted Duck (<6), Little Grebe (<3), Moorhen (<16) and Grey Heron (<3).
12.00hrs-14.30hrs – No target species noted at area 1 during afternoon, with occasional flyover Black-headed, Common and Herring Gull noted passing over only (<5 each). No species were recorded foraging in area 4. At area 2 Gulls were noted foraging and roosting throughout the afternoon with a peak of Black-headed Gull (<30), Herring Gull (<14) and Common Gull (<6) noted at 12.20hrs. A check of the playing fields did not find any Brent Goose scat.
A waterbird survey of the Lakelands from 14.00-14.25hrs recorded – Mute Swan (<2), Coot (<6), Mallard (<25), Tufted Duck (<6), Little Grebe (<4) and Moorhen (<18).

Mistle Thrush (<6), Redwing (<25) and Pied Wagtail (<2) were recorded foraging on the playing fields. No sightings of target species in VEC or Bushy Park.

No Brent Goose scat recorded on the any of the playing fields.

g) February 5th, 2023

Sunrise- 08.03hrs/Sunset 17.15hrs. Weather – Wind North F2, Cloud 3/8, Dry, 2c, Excellent visibility. On-site 10.30hrs – 16.30hrs.

Species recorded –Brent Goose (flyover only), Mute Swan, Mallard, Tufted Duck, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Black-headed Gull, Mediterranean Gull, Common Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Redwing, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Bullfinch.

10.30hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 11.42hrs with Black-headed Gull (<31), Mediterranean Gull (<3), Herring Gull (<10) and Common Gull (<5) noted foraging in the area. At area 1 no foraging species were noted, Goldfinch (<8) and Mistle Thrush (<2) foraging in area, small numbers of Black-headed Gull (<5) and Herring Gull (<3) noted passing over the site. Black-headed Gull (<10) were noted foraging in area 4 during the morning. At Area 2 a peak morning count of Black-headed Gull (<18), Herring Gull (<5) and Common Gull (<2) were noted roosting and foraging at 11.00hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.25-09.50hrs recorded – Mute Swan (<2), Coot (<7), Mallard (<20), Tufted Duck (<8), Little Grebe (<4), Moorhen (<23), Little Egret (<1) and Grey Heron (<1).

12.00hrs-16.30hrs – A flock of Brent Geese (<15) flew northwest over the north end of area 1 at 12.34hrs (height 30m), no other species were recorded with the exception of flyover Gull species. No species were recorded foraging in area 4. At area 2 Gulls were noted foraging and roosting throughout the afternoon with a peak of Black-headed Gull (<45), Herring Gull (<9) and Common Gull (<16) noted at 13.10hrs. At VEC FC grounds a flock of Brent Geese (<130) were noted foraging from 14.40hrs, the birds were not present at 15.50hrs.

A waterbird survey of the Lakelands from 14.00-14.25hrs recorded – Mute Swan (<2), Coot (<7), Mallard (<31), Tufted Duck (<8), Little Grebe (<4) and Moorhen (<19).

Mistle Thrush (<5) and Redwing (<30) were recorded foraging on the playing fields, in areas 2 and 3.

No Brent Goose scat recorded on the any of the playing fields.

h) February 18th, 2023

Sunrise- 07.37hrs/Sunset 17.41hrs. Weather – Wind Southwest F2, Cloud 6/8, Dry, 8c, Excellent visibility. On-site 08.00hrs – 14.00hrs.

Species recorded –Brent Goose (flyover only), Mute Swan, Mallard, Tufted Duck, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Black-headed Gull, Mediterranean Gull, Common Gull, Herring Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Redwing, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Bullfinch.

08.00hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 10.05hrs with Black-headed Gull (<46), Mediterranean Gull (<5), Herring Gull (<7) and Common Gull (<11) noted foraging in the area. At area 1 at flock of Brent Geese (<22) flew west over site at 08.43hrs (height 25m), no foraging species were noted, Goldfinch, small numbers of Black-headed Gull (<4) and Herring Gull (<8) also noted passing over the site. Common Gull (<3) were noted foraging in area 4 intermittently during the morning. At Area 2 a peak morning count of Black-headed Gull (<56), Mediterranean Gull (<2), Herring Gull (14) and Common Gull (<10) were

noted roosting and foraging at 09.55hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.15-09.45hrs recorded – Mute Swan (<2), Coot (<5), Mallard (<17), Tufted Duck (<6), Little Grebe (<4), Moorhen (<19), Little Egret (<1) and Grey Heron (<2).

12.00hrs-14.00hrs – No species recorded foraging in field area at area 1. Common Gull (<2) and Black-headed Gull (<1) noted foraging in area 4 at 12.15hrs. At area 2 a peak of Black-headed Gull (<58), Herring Gull (<12) and Common Gull (<18) noted at 13.30hrs. At area 3 Black-headed Gull (<8) and Herring Gull (<9) foraging at 13.45hrs was the peak count of foraging birds in this area.
A waterbird survey of the Lakelands from 14.00-14.25hrs recorded – Mute Swan (<2), Coot (<5), Mallard (<15), Tufted Duck (<6), Little Grebe (<4) and Moorhen (<17).

Mistle Thrush (2) and Redwing (<15) were recorded foraging on the playing fields, mainly in area 2.

No Brent Goose scat recorded on the any of the playing fields.

i) March 1st, 2023

Sunrise- 07.13hrs/Sunset 18.02hrs. Weather – Wind Northeast F2, Cloud 4/8, Dry, 6c, Excellent visibility. On-site 10.30hrs – 16.45hrs.
Species recorded –Mute Swan, Mallard, Tufted Duck, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Black-headed Gull, Mediterranean Gull, Common Gull, Herring Gull, Lesser black-backed Gull, Woodpigeon, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Bullfinch.
10.30hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 10.45hrs with Black-headed Gull (<23), Mediterranean Gull (<1), Herring Gull (<4), Lesser black-backed Gull (<2) and Common Gull (<4) noted foraging in the area. At area 1 no foraging species were noted. Common Gull (<1) and Black-headed Gull (<3) were noted foraging in area 4 during the morning. At Area 2 a peak morning count of Black-headed Gull (<53), Mediterranean Gull (<5), Herring Gull (18) and Common Gull (<10) were noted roosting and foraging at 11.25hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 11.20-11.45hrs recorded – Mute Swan (<2), Coot (<4), Mallard (<15), Tufted Duck (<5), Little Grebe (<3), Moorhen (<16), Little Egret (<1) and Grey Heron (<1).
12.00hrs-16.45hrs – No species recorded foraging in field area at area 1. Black-headed Gull (<5) noted foraging in area 4 intermittently during the afternoon. At area 2 a peak of Black-headed Gull (<62), Herring Gull (<15) and Common Gull (<18) was noted mainly foraging noted at 13.15hrs. At area 3 Black-headed Gull (<16), Common gull (<3) and Herring Gull (<5) foraging at 14.40hrs was the peak count of foraging birds in this area. At the VEC FC a flock of Brent Geese (<55) were noted foraging from 13.05hrs, still present at 15.10hrs.
A waterbird survey of the Lakelands from 14.00-14.25hrs recorded – Mute Swan (<2), Coot (<4), Mallard (<18), Tufted Duck (<5), Little Grebe (<3), Moorhen (<15) and Little Grebe (<1).

Mistle Thrush were recorded foraging on the playing fields.

No Brent Goose scat recorded on the any of the playing fields.

j) March 26th, 2023

Sunrise- 07.13hrs/Sunset 19.48hrs. Weather – Wind Northeast F1, Cloud 3/8, Dry, 7c, Excellent visibility. On-site 07.45hrs – 13.45hrs.

Species recorded –Mallard, Tufted Duck, Little Grebe, Little Egret, Grey Heron, Moorhen, Coot, Black-headed Gull, Mediterranean Gull, Common Gull, Herring Gull, Lesser black-backed Gull, Woodpigeon, Collared Dove, Grey Wagtail, Dunnock, Robin, Song Thrush, Mistle Thrush, Blackbird, Goldcrest, Wren, Coal Tit, Blue Tit, Long-tailed Tit, Treecreeper, Magpie, Jackdaw, Rook, Hooded Crow, Starling, Chaffinch, Goldfinch, Siskin, Bullfinch.

07.45hrs-12.00hrs – Surveys commenced on arrival at area 3 near entrance, and onwards to area 1, Lakelands, area 4 etc. At Area 3 foraging gull numbers peaked at 09.05hrs with Black-headed Gull (<19) and Herring Gull (<3) noted foraging in the area. At area 1 no foraging species were noted, Herring Gull (<6) noted passing over the site only. No species were noted foraging in area 4 during the morning. At Area 2 a peak morning count of Black-headed Gull (<32), Herring Gull (,8) and Common Gull (<4) were noted roosting and foraging at 10.15hrs. Checks on pitch areas in survey grounds did not find any evidence of Brent Goose scat.

A waterbird survey of the Lakelands from 09.15-09.45hrs recorded – Coot (<4), Mallard (<14), Tufted Duck (<4), Little Grebe (<4), Moorhen (<14) and Grey Heron (<1).
12.00hrs-13.45hrs – No species recorded foraging in field area at area 1. Black-headed Gull (<2) noted foraging in area 4 intermittently during the afternoon. At area 2 a peak of Black-headed Gull (<24), Herring Gull (<5) and Common Gull (<3) were noted foraging at 12.15hrs. At area 3 Black-headed Gull (<16), Common gull (<3) and Herring Gull (<5) foraging at 14.40hrs was the peak count of foraging birds in this area. At the VEC FC a flock of Brent Geese (<55) were noted foraging from 13.05hrs, still present at 15.10hrs.
A waterbird survey of the Lakelands from 12.45-13.15hrs recorded – Coot (<4), Mallard (<12), Tufted Duck (<4), Little Grebe (<4), Moorhen (<13) and Grey Heron (<2).

Mistle Thrush were recorded foraging on the playing fields. Meadow Pipit (<8) were noted passing north over the site on migration during the survey.

No Brent Goose scat recorded on the any of the playing fields.

6) Comments and observations on survey results

In total 43 bird species were recorded over 10 surveys at the survey site area at Terenure College, Dublin, during the winter bird surveys in 2022-2023, Redwing which is red-listed, as a species listed of conservation concern (per Birdwatch Ireland's species of conservation concern 2020-2026) were recorded in the wider survey area , recorded in small numbers (averaging 20-30) foraging on the site. Species amber-listed as wintering species of conservation concern were Mute Swan, Tufted Duck, Mallard, Coot, Black-headed Gull, Common Gull, Lesser black-backed Gull and Herring Gull.
Brent Geese were recorded foraging in the VEC Football Grounds adjacent to Terenure College on three survey dates (27 on 04/12/22, 120 on 11/01/23 and 55 on 01/03/23), the groundman there confirmed with me that they are quite regular at the site, the species was not recorded foraging in the grounds of Terenure College on any of the survey dates, with a few flocks noted passing over the north side of the survey area only, likely birds moving between other sites, correspondence with the grounds staff of the college and regular walkers to the site suggests they are not frequenting the site, and checks for Brent Geese scat did not record any.

Results suggest that the site is not an important ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's).

Appendix III- Winter Bird Surveys February-March 2022

Terenure College Winter Bird Surveys February-March 2022 Terenure College Winter Bird Surveys February-March 2022

Introduction

In February and March 2022, a total of 8 winter bird surveys were conducted at lands at Terenure College, by Hugh Delaney, a freelance ecologist (Birds primarily) with an experienced background in bird surveying on numerous sites with ecological consultancies over 10+ years. Hugh, a lifelong birder, is local to the Dun Laoghaire-Rathdown area in Dublin and is especially familiar with the bird life and its ecology in the environs going back over 30 years.

Winter Bird Survey Methodology

Winter bird surveys are conducted from soon after sunrise until late in the afternoon before sunset, the site is monitored throughout the day and all bird species utilizing the site recorded, including species flying through overhead. Checks are also made on suitable habitat nearby or adjacent the site for comparative purposes and to monitor any interchange of birds between sites. Target species (species of more special interest) utilizing the site will be mapped and estimates of the time these species frequented the site recorded.

Site Location

Fig 1. Site location (outlined in red), outlined in yellow are areas 1 and 2, (playing fields), incorporated into the surveys as significant adjacent habitat within Terenure College.

Site Description

The site comprises a grassland area at the west side bordered by trees and adjacent at the east side an elongated lake area that terminates at a culvert at the eastern end at Lakelands Park. The lake is well-vegetated along its northern edge with trees and other cover.

Specific site survey methodology

Site checked throughout the day with excellent overview vantage point observations of the green at the western side of site made from either end, the lake habitat and areas 1 and 2 checked intermittently throughout the day (averaging at least every 1.5 hours during day).

Survey results

February 13th, 2022

Sunrise- 07.47hrs/Sunset 17.31hrs. Weather – Wind F4 Southeast, Cloud 8/8, Light showers, 3c, Good visibility. On-site 08.30hrs – 16.15hrs.

Species recorded – Black-headed Gull, Herring Gull, Common Gull, Jackdaw, Rook, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Siskin, Bullfinch, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Pied Wagtail, Goldcrest, Mallard, Moorhen, Little Grebe, Coot, Blackbird, Mistle Thrush, Redwing, Robin, Wren, Dunnock, Grey Heron, Kingfisher.

Observations from 08.30hrs – 12.00hrs –

Arriving at the college foraging gulls were noted in areas 1 and 2, Gulls continually foraging in areas 1 and 2 during morning with average numbers of Black-headed Gull (<80), Herring Gull (<10) and Common Gull (<15). On-site at the green area at west side no foraging Gulls or other species were noted with only occasional Black-headed Gull landing briefly into this area during the morning, it was noted that the grass sward here was longer than the playing field areas at 1 and 2 and therefore likely suboptimal for foraging Gulls and other species. A peak count of Black-headed Gull (<155) and Herring Gull (<6) was recorded at areas 1 and 2 at 10.45hrs. At the lake area a survey of species present recorded Mute Swan (<2), Moorhen (<8), Mallard (<11), Little Grebe (<5), Coot (<5) and Grey Heron (<2) at 09.30hrs and remained during the morning. A Kingfisher was recorded at the west end of the lake area at 11.30hrs. Good selection of passerine species around the north side of lake area with foraging finches in alders and other trees, Siskin (<10), Goldfinch (<15), Greenfinch (<2), Bullfinch (<3), Treecreeper (<1), and four Tit species recorded.

Observations from 12.00hrs – 16.15hrs –

Observations on-site recorded minimal activity in the green area at the west side of site, with Black-headed Gull (<1-3) occasionally noted foraging for small periods in the area. Only other species foraging in the area being corvid species (Several of Jackdaw and Hooded Crow), at the lake area similar numbers of waterbird species remained on-site, small increase in Mallard (<14) noted at 14.15hrs. Most waterbird species concentrated in the central area of lake with patches of cover to skulk in are present and members of the public feeding birds from the shore. At areas 1 and 2 Gull foraging activity remained throughout the afternoon with slightly smaller numbers than in the morning. Peak numbers of Black-headed Gull (<85), Common Gull (<12) and Herring Gull (<10) recorded at 14.25hrs. Waterbird species remained stable in number at the lake and were recorded throughout the afternoon.

February 19th, 2022

Sunrise- 07.35hrs/Sunset 17.43hrs. Weather – Wind F3 South, Cloud 7/8, Light showers, 8c, Good visibility. On-site 08.15hrs – 16.00hrs.

Species recorded – Black-headed Gull, Herring Gull, Common Gull, Jackdaw, Rook, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Starling, Siskin, Bullfinch, Redpoll, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Pied Wagtail, Goldcrest, Mallard, Tufted Duck, Moorhen, Little Grebe, Coot, Blackbird, Mistle Thrush, Song Thrush, Robin, Wren, Dunnock, Grey Heron, Little Egret, Sparrowhawk.

Observations from 08.15hrs – 12.00hrs –

A survey of the lake area at 08.45hrs recorded Mallard (<15), Tufted Duck (<2), Mute Swan (<2), Little Grebe (<4), Moorhen (<7), Coot (<4), Grey Heron (<1) and Little Egret (<1) and remained throughout the morning. At the green area at the west side of site no foraging species were recorded throughout the morning, a Sparrowhawk was noted passing west at 11.05hrs. At areas 1 and 2 Black-headed Gulls (averaging about 60 birds), Common Gull (averaging 5) and Herring Gull (averaging 10) were recorded, peak count of 92 Black-headed Gull foraging in areas 1 and 2 noted at 11.45hrs.

Observations from 12.00hrs – 16.00hrs –

In areas 1 and 2 Gulls continued to forage in the afternoon, slightly down on the morning numbers, with a peak count of 65 Black-headed Gull recorded at 12.50hrs. Smaller numbers of Common Gull (<6) and Herring Gull (<15) also recorded. On-site at the green area in west Black-headed Gull (<2) were noted foraging from 13.00-13.20hrs. Corvids (Magpie and Hooded Crow) and several Thrushes (Mistle and Song) also noted occasionally foraging on-site, no other species recorded. A survey of the lakes area at 13.30hrs recorded similar numbers of waterbirds with only changes a slight increase in Moorhen (<10) and Grey Heron (<3). No other target species recorded.

February 24th, 2022

Sunrise- 07.24hrs/Sunset 17.53hrs. Weather – Wind F4 West, Cloud 2/8, Dry, 6c, Excellent visibility. On-site 08.30hrs – 16.30hrs.

Species recorded – Black-headed Gull, Herring Gull, Common Gull, Jackdaw, Rook, Raven, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Siskin, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Goldcrest, Mallard, Moorhen, Little Grebe, Coot, Blackbird, Mistle Thrush, Redwing, Treecreeper, Robin, Wren, Dunnock, Grey Heron, Little Egret.

Observations from 08.30hrs – 12.00hrs –

At 08.50hrs the green play areas in college surveyed recorded at area 1 – Black-headed Gull (<42), Herring Gull (<4), at area 2 – Black-headed Gull (<24), Common Gull (<4) and Herring Gull (<3). At green area on-site no foraging gulls or other species were recorded. At the lakes area Mallard (<12), Moorhen (<9), Grey Heron (<1), Coot (<4), Mute Swan (<2) and Little Grebe (<2) were recorded, most birds present in the central area of the lake. Monitoring the green area on-site for the remainder of morning recorded no foraging species, occasional single Black-headed Gulls alighting briefly into the area and a few foraging Mistle Thrush only. Continual Black-headed Gull, Common Gull and Herring Gulls foraging in areas 1 and 2 during morning with peak counts of 113 Black-headed Gull in area 2 at 10.15hrs, 6 Common Gull at 09.40hrs in area 1 and 5 Herring Gull in area 2 at 11.20hrs. Waterbirds species remained in lake area throughout.

Observations from 12.00hrs – 16.30hrs –

On-site at the green area at the west side of site Black-headed Gulls (<2) noted foraging at from 15.05-15.30hrs, no other species noted foraging in this area. Areas 1 and 2 continued to host both foraging and roosting Gulls during the afternoon, with a peak count at 13.00hrs of Black-headed Gull (<130), Common Gull (<10), and Herring Gull (<2) in area 2. Numbers of foraging Gulls decreasing

later in afternoon with counts of Black-headed Gull (<58), Herring Gull (<2) and Common Gull (<7) foraging in areas 1 and 2 recorded at 15.00hrs. Small numbers of Redwing (<10) recorded foraging in area 1 at 14.30hrs. At the lake area the waterbird species numbers remained stable during the afternoon with Mallard (<10), Moorhen (<8), Coot (<3), Mute Swan (<2), Grey Heron (<1), Little Egret (<1) and Little Grebe (<3) recorded at 15.15hrs.

February 28th, 2022

Sunrise- 07.15hrs/Sunset 18.00hrs. Weather – Wind F1 North, Cloud 5/8, Dry, 5c, Excellent visibility. On-site 08.15hrs – 16.30hrs.

Species recorded – Black-headed Gull, Herring Gull, Common Gull, Mediterranean Gull, Jackdaw, Rook, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Siskin, Redpoll, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Goldcrest, Mallard, Tufted Duck, Moorhen, Little Grebe, Coot, Blackbird, Mistle Thrush, Redwing, Treecreeper, Robin, Wren, Dunnock, Starling, Grey Heron, Little Egret.

Observations from 08.15hrs – 12.00hrs –

At the lakes area at 08.45hrs Mallard (<13), Tufted Duck (<1), Moorhen (<6), Coot (<3), Mute Swan (<2), Little Grebe (<4), Grey Heron (<1) and Little Egret (<2) were recorded and remained throughout the morning. At the green area at the west side of the site Black-headed Gull (<3) were recorded foraging from 09.30-09.50hrs and Herring Gull (<1) at 11.10-11.20hrs. No other foraging species recorded in this area. At areas 1 and 2 Gulls were noted foraging throughout the morning with peak counts of Black-headed Gull (<110) in area 1 at 10.40hrs. Smaller numbers of Herring Gull (<10), Common Gull (<15), and Mediterranean Gull (<2) also recorded. Redwing (<5) noted foraging in area 2 at 11.30hrs. Passerine activity on-site most active in cover around the north side of lake with Siskin (<15), Redpoll (<6), four Tit species, Treecreeper (<1), Greenfinch (<3), Goldfinch (<20) all recorded.

Observations from 12.00hrs – 16.30hrs –

Continued observations at the green area on-site at west end recorded Black-headed Gulls foraging at 13.15hrs (<2) and at 14.20hrs (<1). Small numbers (<5) of Hooded Crow, Magpie and Mistle Thrush were the only other species recorded foraging in this area. Waterbird species remained in-situ at the lake with only changes being a peak of 9 Moorhen recorded at 13.30hrs, most birds again recorded in the central area. Slightly lower numbers of foraging Gulls recorded in areas 1 and 2 with a peak combined count for both areas at 13.45hrs of Black-headed Gull (<70), Common Gull (<8) and Herring Gull (<4). Numbers at other times foraging in the two areas averaging about 40-50 Black-headed Gull. No other target species recorded.

March 3rd, 2022

Sunrise- 07.08hrs/Sunset 18.06hrs. Weather – Wind F2 West, Cloud 5/8, Dry, 6c, Excellent visibility. On-site 08.15hrs – 16.30hrs.

Species recorded – Black-headed Gull, Herring Gull, Common Gull, Jackdaw, Rook, Raven, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Siskin, Redpoll, Bullfinch, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Goldcrest, Mallard, Moorhen, Little Grebe, Coot, Blackbird, Song Thrush, Mistle Thrush, Robin, Wren, Pied Wagtail, Dunnock, Grey Heron, Little Egret, Kingfisher.

Observations from 08.15hrs – 12.00hrs –

On-site at the green area at the west side of the site single Herring Gull at 09.15hrs-09.40hrs and Black-headed Gull at 10.00hrs-10.15hrs were the only foraging species recorded. Passerines

recorded in trees surrounding green area included Mistle Thrush (<3), Pied Wagtail (<2), Blackbird (<1), Robin (<2) and Dunnock (<2). At the lake area Mute Swan (<2), Mallard (<18), Coot (<5), Little Grebe (<5), Moorhen (<9), Grey Heron (<1) and Little Egret (<1) were recorded. In area 1 and 2 Gull numbers foraging were slightly down on previous counts with a peak at 10.30hrs of Black-headed Gull (<45), Common Gull (<5) and Herring Gull (<8) recorded.

Observations from 12.00hrs – 16.30hrs –

At the lake area the only changes on the morning counts was a peak of 21 Mallard at 14.50hrs and 11 Moorhen at 13.00hrs. A Kingfisher was noted feeding at the west end of the lake area at 14.35hrs and 16.05hrs. At the green area at west end of the site no foraging Gulls were recorded, Mistle Thrush (<2), Magpie (<3), Hooded Crow (<2) and Pied Wagtail (<1) were recorded foraging in this area. Goldcrest (<2), Chaffinch (<5), Siskin (<8), Redpoll (<2), Bullfinch (<4), Goldfinch (<10) and Song Thrush (<2) were noted foraging or singing in cover around the lakes area. In areas 1 and 2 a peak count of 35 Black-headed Gulls and 2 Herring Gull were noted at 14.45hrs with smaller numbers of Black-headed (<20) noted at other times. Raven (<2) passed south over area 1 at 15.10hrs.

March 12th, 2022

Sunrise- 06.47hrs/Sunset 18.23hrs. Weather – Wind F2 Southwest, Cloud 4/8, Dry, 7c, Excellent visibility. On-site 08.00hrs – 16.00hrs.

Species recorded – Black-headed Gull, Herring Gull, Common Gull, Lesser black-backed Gull, Jackdaw, Rook, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Siskin, Redpoll, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Goldcrest, Mallard, Moorhen, Little Grebe, Coot, Blackbird, Song Thrush, Mistle Thrush, Starling, Robin, Wren, Pied Wagtail, Grey Wagtail, Dunnock, Grey Heron.

Observations from 08.00hrs – 12.00hrs –

On-site at the west side at the green area no foraging Gulls were recorded with small numbers of Lesser black-backed Gulls (<5) noted moving north over the site during the morning. Corvids (Magpie and Hooded Crow), Mistle Thrush (<2) and Pied Wagtail (<1) noted occasionally foraging on-site. At the lakes area Mallard (<15), Mute Swan (<2), Coot (<4), Moorhen (<10), Little Grebe (<5) and Grey Heron (<1) were recorded at 08.45hrs and noted throughout the morning. Peak count of Black-headed Gull (<35) noted in areas 1 and 2 at 09.40hrs, with small numbers of Common Gull (<5) and Herring Gull (<10) occasionally noted foraging in the same areas during the morning.

Observations from 12.00hrs – 16.00hrs –

At the lakes area the waterbird species and numbers close to those in the morning with only changes noted being Mallard increasing to 18 birds at 15.20hrs and 2 Grey Heron noted at 13.45hrs. Similar range of passerines noted around the lake area as recorded previously with counts of Siskin (<6), Redpoll (<4), Chaffinch (<6), Goldfinch (<12), Robin (<4), Goldcrest (<3), Blackbird (<8) and Grey Wagtail (<1). No foraging Gulls noted foraging at the green area at the west side of the site. At areas 1 and 2 Black-headed Gulls peaked at 30 birds foraging at 15.15hrs. Occasional Herring Gull (<5) also noted foraging in areas 1 and 2, no other target species recorded.

March 19th, 2022

Sunrise- 06.30hrs/Sunset 18.36hrs. Weather – Wind F3 Southeast, Cloud 3/8, Dry, 6c, Excellent visibility. On-site 07.45hrs – 16.00hrs.

Species recorded – Black-headed Gull, Herring Gull, Lesser black-backed Gull, Jackdaw, Rook, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Collared Dove, Chaffinch, Greenfinch, Goldfinch,

Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Goldcrest, Mallard, Moorhen, Little Grebe, Coot, Blackbird, Song Thrush, Mistle Thrush, Starling, Robin, Wren, Pied Wagtail, Dunnock, Grey Heron, Sparrowhawk.

Observations from 07.45hrs – 12.00hrs –

At 08.15hrs at the lakes Mallard (<10), Coot (<5), Little Grebe (<5), Moorhen (<12), Mute Swan (<2) and Grey Heron (<2) were recorded. At the green area on-site at west side no foraging Gulls were recorded with Corvids (Hooded Crow and Magpie) recorded, a pair of Mistle Thrush were noted nest building in a tree at the west side of the area. A Sparrowhawk was noted soaring over the site at 09.20hrs. At areas 1 and 2 foraging Gull numbers had depleted on previous counts (Birds having moved off to breeding areas) with a peak count of 20 Black-headed Gull and 5 Herring Gull at 11.15hrs. Two Lesser black-backed Gull were seen briefly foraging in area 1 at 10.25hrs.

Observations from 12.00hrs – 16.00hrs –

Waterbird numbers at the lake area remained similar to the morning with an increase in Mallard to 15 at 14.30hrs noted. At the green area at west side of site a Black-headed Gull was recorded briefly foraging at 13.45hrs, no other target species recorded foraging in this area. In areas 1 and 2 a peak count of Black-headed Gull (<22) and Herring Gull (<7) were recorded at 14.00hrs. A movement of 7 Lesser black-backed Gull were noted passing north.

March 30th, 2022

Sunrise- 07.03hrs/Sunset 19.56hrs. Weather – Wind F2 Northeast, Cloud 5/8, Dry, 6c, Excellent visibility. On-site 08.00hrs – 16.00hrs.

Species recorded – Black-headed Gull, Herring Gull, Lesser black-backed Gull, Jackdaw, Rook, Hooded Crow, Magpie, Woodpigeon, Feral Pigeon, Collared Dove, Chaffinch, Greenfinch, Goldfinch, Blue Tit, Long-tailed Tit, Coal Tit, Great Tit, Goldcrest, Mallard, Tufted Duck, Moorhen, Little Grebe, Coot, Blackbird, Song Thrush, Mistle Thrush, Starling, Robin, Wren, Pied Wagtail, Dunnock, Grey Heron.

Observations from 08.00hrs – 12.00hrs –

At the green area at the west side of the site Corvids (Jackdaw, Hooded Crow and Magpie) and Pied Wagtail (<2) were the only foraging species recorded during the morning. At the lakes Mallard (<10), Tufted Duck (<2), Mute Swan (<2), Moorhen (<8), Little Grebe (<5), Coot (<4) and Grey Heron (<2) were recorded and remained throughout the morning. At areas 1 and 2 Black-headed Gulls peaked at 20 birds recorded foraging at 11.30hrs, small numbers of Herring Gull (<8) also recorded. Lesser black-backed Gull (<11) were noted passing over the site, none recorded foraging.

Observations from 12.00hrs – 16.00hrs –

At areas 1 and 2 small numbers of Black-headed Gull (<15), Herring Gull (<10) and single Lesser black-backed Gull were noted foraging in the afternoon. Waterbird species at the lakes remained similar with Coot observed engaging in courtship behavior. Long-tailed Tit was observed nest building at east end of the lake area. Blackbird was noted nest building in cover at the south side of the green area at west end of the site. No other foraging species apart from corvids and thrushes and Starlings (<20) noted foraging at the west side of the site.

Comments and observations on the survey results

42 bird species were recorded at Terenure College lands during 8 winter bird surveys from February 2022 to March 2022. In the context of wintering bird species that are red listed as species of conservation concern in the revised Birdwatch Ireland List of birds of conservation concern in Ireland

(2020-2026) Redwing was recorded in small numbers. Three gull species listed in the amber wintering species category were recorded, these being Black-headed, Herring and Lesser black-backed Gull. Lesser black-backed Gull was noted passing mainly passing through the site and rarely foraging on-site. Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's).

Significant numbers of mainly Black-headed Gulls were noted foraging in the college grounds outside the site (in playing field areas 1 and 2), these areas being well maintained and of short sward height, the grassland area within the site was considered suboptimal for foraging Gulls being of a longer length and was only occasionally visited by much smaller numbers of Black-headed Gulls. Gulls ideally prefer a shorter sward height to access food, and this would also apply to some other species like Brent Geese. Liaising with the public accessing the college grounds during surveys and contact with a birder contact living in the area many years I could find no reference to target species (specifically Brent Geese and/or wader species) utilizing the college grounds, and a check online with bird record depositories (for example irishbirding.com) could not unearth any records of these species accessing the site, with the nearest locations being sites closer to the city or the coast to the east.