

Natura Impact Statement

PRESENTED TO

MARINA QUARTER LTD.

**PROPOSED LARGE SCALE RESIDENTIAL DEVELOPMENT AT
LANDS TO THE SOUTH OF BÓTHAR MAOL AND TO THE WEST OF
BLACKROCK ROAD AT HAGGARDSTOWN, DUNDALK, CO. LOUTH**

November 2023

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1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Marina Quarter Ltd., to prepare an Appropriate Assessment (AA) Screening Report in relation to a Proposed Large-Scale Residential Development (LRD) (the 'Proposed Development') on lands to the south of Bóthar Maol and to the west of Blackrock Road at Haggardstown, Dundalk, Co. Louth (the 'Site'). The AA Screening Report concluded that a degree of uncertainty exists in whether the Proposed Development could give rise to potentially significant effects on two nearby European sites, namely:

- Dundalk Bay SAC (000455).
- Dundalk Bay SPA (004026).

Therefore, a Natura Impact Statement (NIS) has been prepared for the Proposed Development. The purpose of this NIS report is to provide information for the relevant competent authority to carry out a Stage 2 Appropriate Assessment in respect of the Proposed Development.

1.2 Quality Assurance and Competence

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

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

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. LG, and GK, Ecologists with Enviroguide, undertook the desktop research and writing of this Report. BMcC, Ornithologist and Ecologist with Enviroguide, undertook the Wintering Bird Surveys for this report.

GK has a B.Sc. (Hons) in Zoology from University College Cork, and has experience in desktop research, reporting and GIS works, as well as practical field experience including marine mammal monitoring, passive acoustic monitoring, water quality monitoring and Wintering bird surveys. GK has prepared several Appropriate Assessment screening reports.

BMcC is a graduate Ecologist and experienced Ornithologist with 12 years of bird survey experience. BMcC is a longstanding and active member of Bird Watch Ireland and has provided Ornithology survey work for ecological consultancies, e.g., vantage points surveys of gulls, terns, raptors, waders and wildfowl; hinterland surveys of the

above as well as riverine species; and breeding waders and country birds. BMcC is highly experienced with all survey methodologies and with surveying all species groups of Irish birds and migrants.

Enviroguide Senior Ecologist LG has a B.Sc. in Zoology (Hons) and a M.Sc. (Hons) in Wildlife Conservation and Management from University College Dublin. LG also has a wealth of experience in desktop research, literature scoping-review, and report writing, as well as practical field experience (Bat surveys, habitat surveys, invasive species surveys, wintering bird surveys, large mammals, fresh water macro-invertebrates etc.). LG has extensive experience in compiling Biodiversity Chapters of EIARs, Ecological Impact Assessments (EclA), Appropriate Assessment (AA) screening and Natura Impact Statements (NIS) reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments. LG is also a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.3 Description of Proposed Development

1.3.1 Site Location

The Site of the Proposed Development comprises a greenfield site located within the townland of Haggardstown, south of Dundalk, Co. Louth, and just north of the town of Blackrock.

The Site is located adjacent to the Dundalk Golf Club, which lies along its western boundary, and ca.3.2km east of the M1 motorway. Part of the Site's access road in the south-east of the Site runs along the R172 regional road and the Dundalk Bay coastline. The Site currently comprises several agricultural fields and associated vegetated boundaries. The Site is bounded by agricultural fields to the south, Dundalk Golf Club to the west, and residential lands to the north and east. An arm of the redline boundary extends into the Finnabair Industrial Park to the north to allow the Proposed Development to link in with local water infrastructure. The location of the Site is presented in Figure 1 below.

1.3.2 Proposed Development Description

Marina Quarter Limited intends to apply for permission for a Large-Scale Residential Development (LRD) at this site of c. 18.54 hectares at lands located at Haggardstown, Dundalk, Co. Louth.

The application site is principally bounded by: the R172 Blackrock Road and existing residential properties to the east; Bóthar Maol and existing residential properties to the north; Dundalk Golf Club (Birch's Lane, Blackrock, Co. Louth, A91 R588) to the west and southwest and an existing residential property and agricultural land to the south. The application site also includes land within the public highway at R172 Blackrock Road to the east, north and north east, Bóthar Maol and Finnabair Crescent to the north.

The development will consist of the:

- Construction of 502 no. residential units ranging in height from one storey to three storeys comprising 26 no. four-bedroom semi-detached houses (147.8 sq. m each); 214 No. two-bedroom houses (73.6 sq. m each); 1 No. three-

bedroom bungalow (111.5 sq. m); 209 No. three-bedroom terraced houses and semi-detached houses (ranging in size between 88.9 sq. m and 100 sq. m, some of which include garden sheds) and 52 No. one-bedroom maisonettes (ranging in size between 56.5 sq. m, 64.8 sq. m and 81.4 sq. m);

- Construction of a two-storey crèche (c. 570.7 sq. m.) with associated external play area (c. 813 sq. m.);
- Provision of public open space (totalling c. 4.69 ha of which c. 3.09 ha comprises strategic amenity space) and private open space (in the form of private garden areas serving the houses, bungalow, and maisonettes); and
- Provision of vehicular, cyclist and pedestrian access / egress and associated circulation routes (including the construction of new dedicated entrance to the R172 Blackrock Road, with a southbound right hand turning lane and a new northbound bus stop, 2 no. new pedestrian access points routes to Bóthar Maol, and 1 no. new pedestrian and cycle path access point along the north eastern boundary to Bóthar Maol).

The development will also consist of:

- 762 No. car parking spaces (including 738 No. residential car parking spaces, 4 no accessible visitor car parking spaces and 20 No. car parking spaces serving the proposed crèche);
- Electric vehicle (EV) charging infrastructure;
- 660 No. bicycle parking spaces (comprising 502 No. residential bicycle parking spaces; 120 No. visitor bicycle parking spaces; 6 No. long-term bicycle parking spaces for the creche; 16 No. visitor bicycle parking spaces for the creche and 16 no. shared bicycle parking spaces serving the proposed strategic amenity / public open space);
- Bicycle storage;
- Bin storage;
- Photovoltaic roof panels;
- 6 No. ESB sub-stations;
- Undergrounding and diversion of the existing 10kV and 20kV overhead power lines;
- Provision of public lighting;
- Boundary treatments (including gates, piers and railings);
- Equipped play areas;
- Public art and wayfinding;
- All hard and soft landscaping;
- Provision of Sustainable Urban Drainage systems (SUDS);
- 1 No. Type 3 Wastewater Pumping Station and associated 24 Hr underground emergency storage tank; and

- All other associated site excavation, infrastructural and site development works above and below ground, including changes in level, and associated retaining features, resurfacing, and associated site servicing (foul and surface water drainage and water supply) on the subject Site.

1.3.3 Drainage and Foul Water

1.3.3.1 Existing Surface Water Situation

According to the Infrastructure Design Report (IDR) prepared by Donnachadh O'Brien & Associates Consulting Engineers Ltd. (DOBA, 2023a), there is no formal surface water drainage on site with the exception of an existing watercourse which is evident along the eastern boundary adjacent to the R172 Blackrock Road. Further to a review of the topographical survey, geotechnical investigations carried out on site and the Site Specific Flood Risk Assessment (SSFRA) prepared by Finn Design Partnership (submitted with this application), surface water run-off, which does not infiltrate to ground, from the existing greenfield site and thus the subject lands flows overland in an easterly direction towards the existing watercourse. This existing watercourse flows northwards via existing culverts and conveyance channels prior to crossing beneath the R172 and discharging in a north-easterly direction towards the Irish Sea. The Applicant notes that the surface water discharge locations, as illustrated on DOBA Engineering drawing series C-0200 pertaining to the Proposed Development, are located in the same positions and use the same existing culverts and conveyance channels as was previously granted by An Bord Pleanála case reference TA15.304782. Additionally, the proposed surface water discharge rate from the development, equating to 67.50 litres per second (l/s) as calculated in Section 4.6 of this Infrastructure Design Report, is 38.4 l/s less than the permitted rate of 105.9 l/s, and therefore comparatively reduces flows on the downstream receiving network.

1.3.3.2 Proposed Surface Water Management

It is proposed to collect and manage surface water at the Site through a suite of Sustainable Urban Drainage System (SUDS) measures, prior to discharge to Dundalk Bay; a) via a new headwall constructed along an existing drain to the north-east of the main Site area, and b) to the existing drainage infrastructure within the R172 road in the east of the Site, at the proposed main entrance.

The SUDS measures proposed by DOBA include the following:

- Bioretention areas and bioswales located within the proposed Loaker's Park and various green spaces within the Site.
- Tree pits and unlined tree pit trenches dotted throughout the Site.
- Unlined permeable paving located throughout the development under all the residential driveways.
- Filter drains located underground along the main entrance roadway.
- Detention basins located throughout the Loaker's Park and other greens spaces at the Site. In the east of the Site, detention basins are connected to underground attenuation tanks to provide additional capacity.
- Oversized pipes are proposed to be used.

- Petrol/oil separators are proposed to be placed prior to the discharge of surface water to the public surface water drainage network.
- Rain water harvesting proposed as a source control measure to the Creche only.

1.3.3.3 Foul Drainage

There is no existing wastewater drainage infrastructure on or in close proximity to the Site of the Proposed Development. The closest gravity wastewater network, as indicated by the Uisce Éireann (UE) GIS mapping, which is applicable for a connection from the proposed development, is located along Finnabair Crescent, approximately 0.8km to the north-west of the Site.

The Applicant has liaised with UE in relation to the Proposed Development and submitted a pre-connection enquiry (PCE) to which UE responded. The Connection & Developer Services (CDS) Response noted that a new wastewater connection is feasible subject to upgrades.

According to the IDR (DOBA, 2023a), the proposed wastewater network will collect effluent from the Proposed Development via a main wastewater drainage network which is located within the road network around the Proposed Development where it will finally discharge by gravity to a new 189m³ Type 3 Wastewater Pump Station (WwPS) to the east of the Proposed Development. A new 110mm internal diameter (I.D.) rising main will be installed along the public roads with scour and air valves as required and shall discharge to a new stand-off manhole prior to connecting to the existing gravity network at Finnabair Crescent in accordance with the requirements from the UE CoF. Flows from this point discharge by gravity to the existing Coes Road WwPS and are then pumped northeast to the final destination of the Dundalk WwTP. The proposed wastewater sewer network has been designed in accordance with the principles and methods set out in UE's Code of Practice for Wastewater Infrastructure IW-CDS-5030-03, IS EN 752 Drain & Sewer Systems outside Buildings, IS EN 12056 Gravity Drainage Systems inside Buildings and the Building Regulations Technical Guidance Document Part H Drainage & Wastewater.

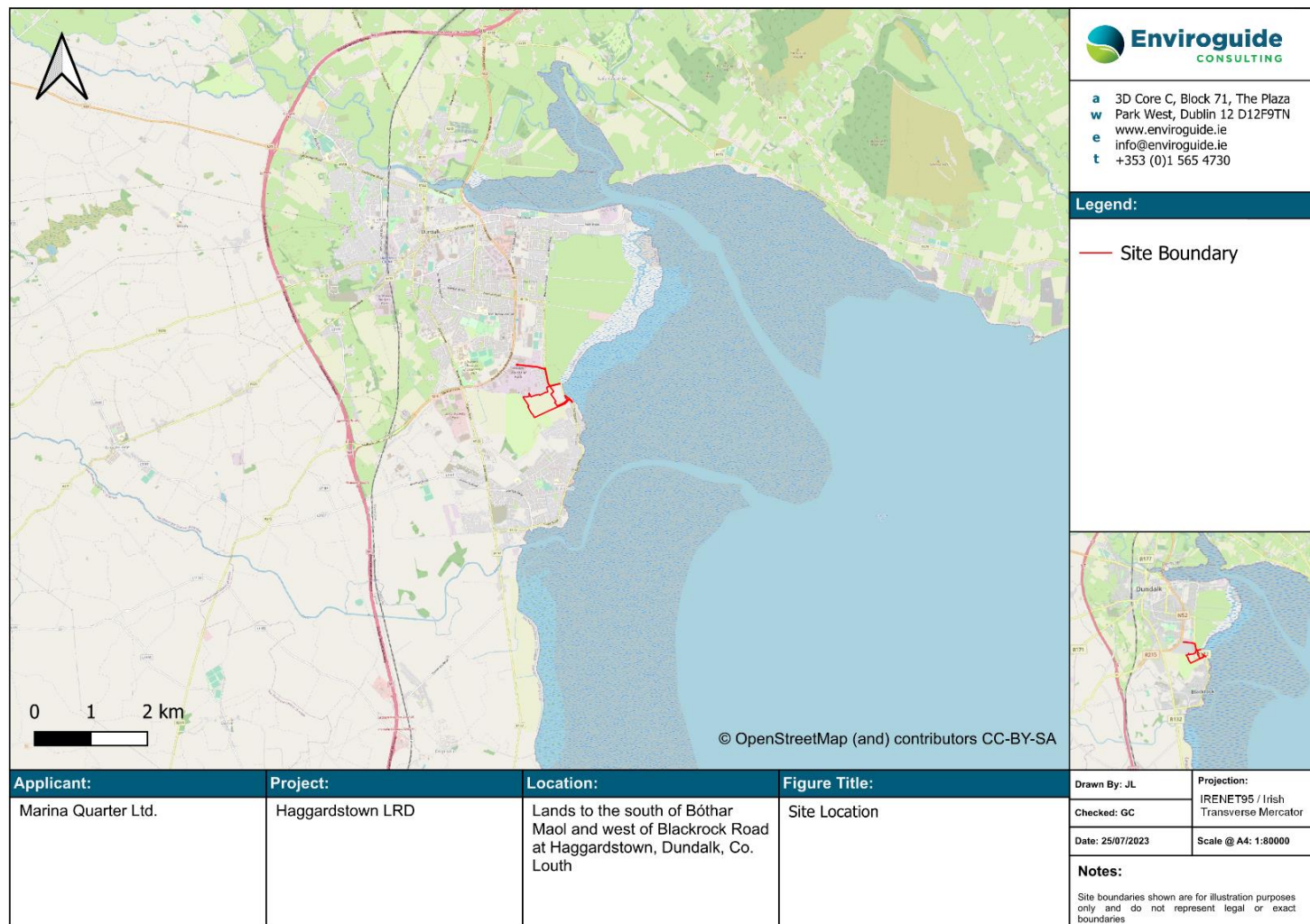


FIGURE 1. SITE LOCATION



2 LEGISLATIVE AND POLICY CONTEXT

2.1 Legislative Background

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protected Areas (SPAs). The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011). It is the responsibility of each member state to designate SPAs and SACs, both of which will form part of Natura 2000, a network of protected sites throughout the European Community.

SACs and SPAs are collectively known as “Natura 2000” or “European” sites. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of the sites; from these the conservation objectives of the site are derived.

An ‘Appropriate Assessment’ (AA) is an assessment required prior to the grant of planning permission to determine whether a plan or project, based on best scientific knowledge, will have an adverse effect on the integrity of a European site, either alone or in combination with other plans and projects. It is required for any plan or project not directly connected with or necessary to the management of a site but likely to have a significant effect on it.

An AA is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a Natura 2000 site. Paragraph 3 states that:

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

2.1.1 Legislative Context

The obligations in relation to Appropriate Assessment have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended (“the 2000 Act”), and in particular Section 177T and Section 177V thereof in relation to Natura Impact Statements and Appropriate Assessment. The relevant provisions of Section 177T and 177V are set out below:

“177T.— (1) *In this Part— (a) A Natura impact report means a statement for the purposes of Article 6 of the Habitats Directive, of the implications of a Land use plan, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.*

(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites.”

(3) ...

(4) The applicant for consent for proposed development may, or if directed in accordance with subsection (5) by a competent authority, shall furnish a Natura impact statement to the competent authority in relation to the proposed development.

(5) At any time following an application for consent for proposed development a competent authority may give a notice in writing to the applicant concerned, directing him or her to furnish a Natura impact statement.

(6) ...

(7) (a) Without prejudice to subsection (1) a Natura impact report or a Natura impact statement shall include all information prescribed by regulations under section 177AD .

(b) Where appropriate, a Natura impact report or a Natura impact statement shall include such other information or data as the competent authority considers necessary to enable it to ascertain if the draft Land use plan or proposed development will not affect the integrity of the site.”

“177V.— (1) *An appropriate assessment carried out under this Part shall include a determination by the competent authority under Article 6.3 of the Habitats Directive as to whether or not a draft Land use plan or proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority, in each case where it has made a determination under section 177U(4) that an appropriate assessment is required, before—*

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

(b) consent is given for the proposed development.

(2) In carrying out an appropriate assessment under subsection (1) the competent authority shall take into account each of the following matters:

(a) the Natura impact report or Natura impact statement, as appropriate;

(b) any supplemental information furnished in relation to any such report or statement;

(c) if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura impact statement;

(d) any additional information furnished to the competent authority at its request in relation to a Natura impact report;

(e) any information or advice obtained by the competent authority;

(f) if appropriate, any written submissions or observations made to the competent authority in relation to the application for consent for proposed development;

(g) any other relevant information.

(3) Notwithstanding any other provision of this Act, or, as appropriate, the Act of 2001, or the Roads Acts 1993 to 2007 and save as otherwise provided for in sections 177X, 177Y, 177AB and 177AC, a competent authority shall make a Land use plan or give consent for proposed development only after having determined that the Land use plan or proposed development shall not adversely affect the integrity of a European site.

(4) Subject to the other provisions of this Act, consent for proposed development may be given in relation to a proposed development where a competent authority has made modifications or attached conditions to the consent where the authority is satisfied to do so having determined that the proposed development would not adversely affect the integrity of the European site if it is carried out in accordance with the consent and the modifications or conditions attaching thereto.”

2.2 Policy Context

2.2.1 Louth County Development Plan

Policies and objectives of the Louth County Development Plan 2021 – 2027 that are of relevance to this Screening Report are outlined below:

- **NBG 3:** To protect and conserve Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated under the EU Habitats and Birds Directives.
- **NBG 4:** To ensure that all proposed developments comply with the requirements set out in the DECLG ‘Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities 2010’.
- **NBG 5:** To ensure that no plan, programme, or project giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan, either individually or in combination with other plans, programmes or projects.
- **NBG 6:** To ensure a screening for Appropriate Assessment (AA) on all plans and/or projects and/or Stage 2 Appropriate Assessment (Natura Impact Report/ Natura Impact Assessment) where appropriate, is undertaken to make a

determination. European Sites located outside of the County but within 15km of the proposed development site shall be included in such screenings as should those to which there are pathways, for example, hydrological links for potential effects.

- **NGB 7:** To co-operate with the Regional Planning Assembly and adjoining local authorities, public agencies and community interests to protect regionally significant heritage assets, environmental quality, and to identify threats to existing environmental quality in a transboundary context throughout the region including Northern Ireland.
- **NGB 10:** To ensure that development proposals, where relevant, improve the ecological coherence of the Natura 2000 Network of European Sites and encourage the retention and management of landscape features as per Article 10 of the Habitats Directive.

2.2.2 County Louth Biodiversity Action Plan

County Louth Biodiversity Action Plan 2021-2026 is set out to protect and improve biodiversity through objectives as below:

- **Objective 1:** Mainstream biodiversity into decision-making across all sectors.
- **Objective 2:** Strengthen the knowledge base for conservation, management, and sustainable use of biodiversity.
- **Objective 3:** Increase awareness and appreciation of biodiversity and ecosystem services.
- **Objective 4:** Conserve and restore biodiversity and ecosystem services in the wider countryside.
- **Objective 5:** Conserve and restore biodiversity and ecosystem services in the marine environment.
- **Objective 6:** Expand and improve management of protected areas and species.

2.3 Stages of Appropriate Assessment

The AA process is a four-stage process. Each stage requires different considerations, assessments and tests to ultimately arrive at the relevant conclusion for each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

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

- **Stage 1: Screening.** The Screening for AA considers whether a plan or project is directly connected to or necessary for the management of a European site, or whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.
- **Stage 2: Natura Impact Statement (NIS).** Where Stage 1 determines that significant effects are likely, uncertain or unknown, the preparation of a NIS is required. The NIS must include a scientific examination of evidence and data

to classify potential impacts on any European site(s) in view of their conservation objectives in the absence of mitigation. The NIS will identify appropriate mitigation to remove the potential for likely significant adverse effects on any European site(s). If the competent authority determines that the plan or project would have an adverse effect on the integrity of any European site(s) despite mitigation, it can only grant consent after proceeding through stages 3 and 4.

- **Stage 3: Assessment of alternative solutions.** If the outcome of Stage 2 is negative i.e., adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.
- **Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain.** The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European site, where no less damaging solution exists.

The Habitats Directive promotes a hierarchy of avoidance, mitigation, and compensatory measures. First the project should aim to avoid any negative effects on European sites by identifying possible effects early in the planning stage and designing the project to avoid such effects. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the project is still likely to result in adverse effects, and no further practicable mitigation is possible, a refusal for planning permission may be recommended. In this case, the project will generally only be considered where no alternative solutions are identified and the project is required for IROPI, or, in the case of priority habitats, considerations of health or safety, or beneficial consequences of primary importance for the environment or to other IROPI. Then compensation measures are required for any remaining adverse effects.

2.4 Stage 1: Appropriate Assessment Screening Conclusion

An AA Screening Report was prepared for the Proposed Development by Enviroguide Consulting in June 2023.

The conclusion of the AA Screening Report is as follows:

“The Proposed Development at Haggardstown, Dundalk, Co. Louth has been assessed taking into account:

- *The nature, size and location of the proposed works and possible impacts arising from the construction works.*
- *The QIs and conservation objectives of the European sites.*
- *The potential for in-combination effects arising from other plans and projects.*

In conclusion, upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of

*this report that the possibility **cannot be excluded** that the Proposed Development will have a significant effect on any of the European sites listed below:*

- Dundalk Bay SAC (000455).
- Dundalk Bay SPA (004026).

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures which could have the effect of mitigating any effects on any European Sites have similarly not been taken into account.

On the basis of the screening exercise carried out above, it can be concluded, on the basis of the best scientific knowledge available and objective information, that the possibility of any significant effects on the above listed European sites, whether arising from the project itself or in combination with other plans and projects, cannot be excluded in light of the above listed European sites' conservation objectives. Thus, there is a requirement to proceed to Stage 2 of the Appropriate Assessment process; and a NIS has been prepared and submitted with the LRD application under a separate cover."

As such, this NIS will assess the potential effects of the Proposed Development on:

- Dundalk Bay SAC (000455).
- Dundalk Bay SPA (004026).

These sites are linked to the Proposed Development via hydrological, land, and air pathways.

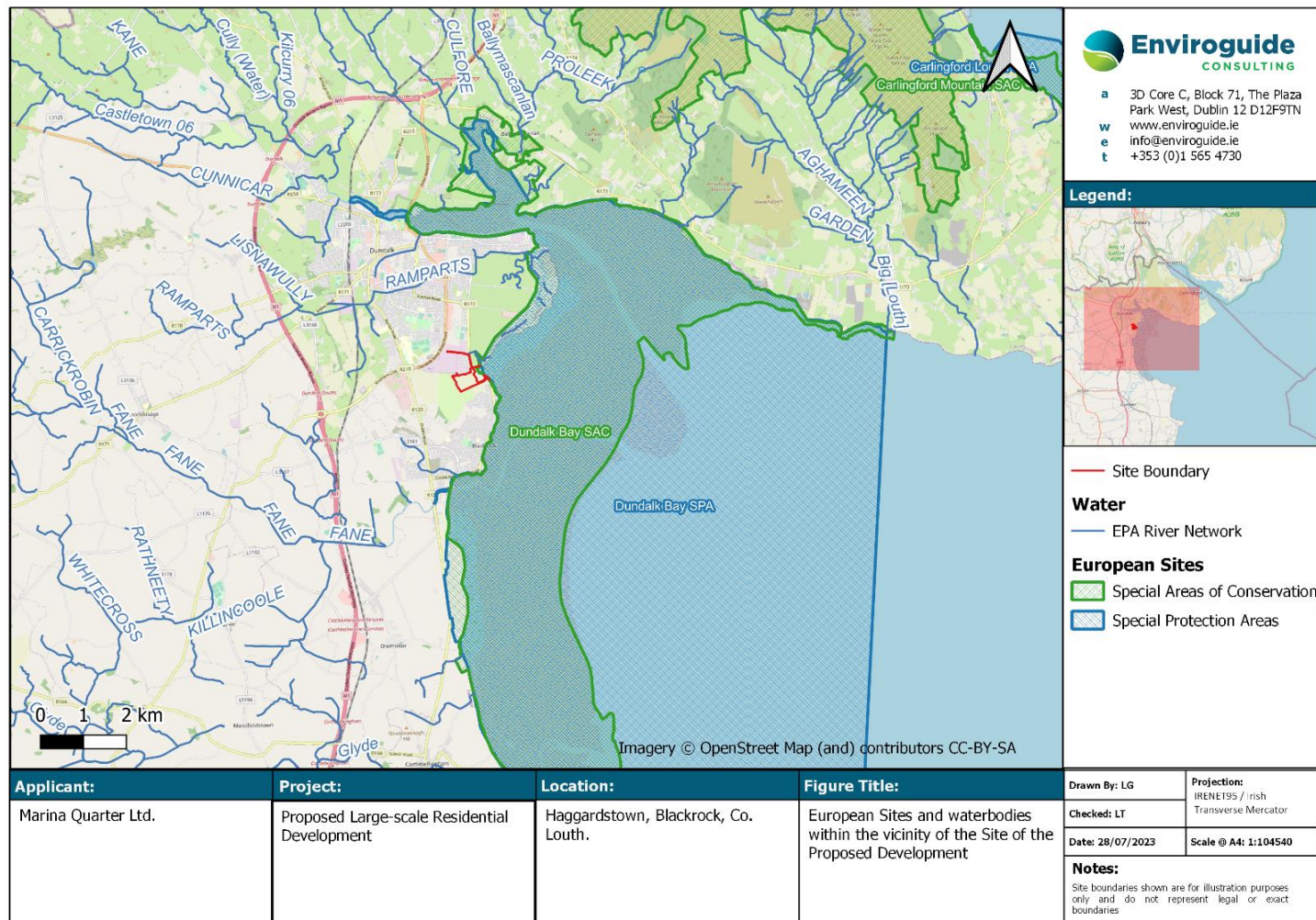


FIGURE 3. RELEVANT EUROPEAN SITES AS IDENTIFIED IN AA SCREENING .

3 NIS METHODOLOGY

3.1 Guidance

This NIS has been undertaken in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10;
- *Communication from the Commission on the precautionary principle* (European Commission, 2000);
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019);
- *Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2021);
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021; and*
- *Amendments to section 42 of the Planning and Development Act 2000, as amended and associated Planning and Development Regulations 2001. Department of the Environment, Heritage and Local Government. (2021). Circular Letter: EUIPR 01/2021.*

3.2 NIS Steps

This NIS has been prepared following the steps described below:

- Description of the baseline existing environment at the Site of the Proposed Development;
- Review and description of available data for the relevant European site(s) potentially affected as identified in the Screening Report (Enviroguide, 2023);
- Identification and description of potential effects on the relevant European site(s) and their designated QIs/SCIs;
- Assessment of the likely significance of the effects and/or impacts identified on the relevant QIs/SCIs in view of their Site Specific Conservation Objectives (SSCOs);
- Description and characterisation of other projects or plans that in combination with the Proposed Development have the potential for having significant effects on the relevant QIs/SCIs in view of their SSCOs;

- Identification of appropriate mitigation measures to remove the likelihood of significant effects on any European site(s) and their QIs/SCI; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects once mitigation measures are adhered to.

3.3 Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources relevant for the completion of the NIS. The desk-top study, completed in June 2023, relied on the following sources:

- Information on the network of European sites, relevant boundaries, QIs and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at www.npws.ie;
- Information on the status of EU protected habitats and species in Ireland, obtained from the NPWS Article 17 reports;
- Text summaries of the relevant European sites taken from the respective Site Synopses for each site, available at www.npws.ie;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at www.gis.epa.ie;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at www.gsi.ie;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland; and
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and their design team.

A comprehensive list of all the specific documents and information sources consulted in the completion of this report is provided in Section 6 - References.

3.4 Field Surveys

3.4.1 Wintering Bird Surveys

Winter bird surveys were conducted at the Site by Enviroguide Ornithologists over the course of the 2022/23 winter. The objective of these surveys was:

- To assess the potential usage of the Site by waterbirds during the winter months as an *ex-situ* site; and
- To determine the composition, numbers, frequency, and heights of species in flight over the Site of the Proposed Development, if any, in order to inform decisions on potential disturbance to flight-lines of birds commuting to/from roost sites and/or between feeding sites as a result of the construction of the proposed buildings.

The survey methodology follows the non-breeding bird survey guidance published by the Bird Survey & Assessment Steering Group (2022) '*Bird Survey Guidelines for assessing ecological impacts*'. Each survey consists of a combination of walked transects of the Site (being walked at a slow, ambling pace, stopping to scan priority habitat/features where appropriate) and vantage point observation from fixed points, as required. The flight-line survey component consists of vantage point observation by a surveyor using binoculars and identification guides where necessary to identify all target species in flight over the Site.

All surveys were undertaken using:

- Opticron 8x42 binoculars (or equivalent).
- Opticron 20x Telescope (or equivalent).
- Agreed survey methodology.
- A4 map of the survey area.

3.5 Impact Prediction

Potential impacts on the relevant European site(s) identified during the AA Screening are based on information regarding their QIs and/or SCI species, and the attributes and targets relating to their Site-Specific Conservation Objectives (SSCOs). These have been informed by the desk study and any field surveys carried out prior to the preparation of this report.

Impact prediction is based on the Source-Pathway-Receptor (S-P-R) model. The following describes the steps of the S-P-R approach taken in this NIS:

- Potential sources of effects were identified based on the Proposed Development description and details, including changes to potentially suitable *ex-situ* habitats at the Site (i.e., habitats utilised by Species of Conservation Importance (SCI) bird species outside of their designated SPAs).
- Up-to-date GIS spatial datasets for water catchments as well as any information from relevant site investigations and/or field surveys were used to identify the QIs/ SCIs within the relevant European site(s) that have a notable S-P-R connection to the Proposed Development:
 - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any QIs/SCIs.
 - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any QIs/SCIs.
 - Air and land connectivity assessed based on Proposed Development details and proximity to QIs/SCIs.
 - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.

- Identification of the specific attributes and targets likely to be affected for those QIs/SCIs linked to the Proposed Development via notable S-P-R connections, and a description of the potential impacts.

Where the preceding steps identified any potential for adverse impacts on any QIs/SCIs or their SSCOs for the relevant European site(s), appropriate mitigation measures to eliminate the potential for significant adverse effects are identified in this Report.

3.6 Limitations

No limitations were encountered which would prevent robust conclusions being drawn as to the potential impacts of the Proposed Development on the relevant European sites.

4 NATURA IMPACT STATEMENT

4.1 Existing Environment

4.1.1 Desk Study Results

4.1.1.1 Hydrology, Geology and Hydrogeology

The Site of the Proposed Development is within the Newry, Fane, Glyde and Dee catchment, the Castletown_SC_020 sub-catchment, and the HAGGARDSTOWN_010 river sub-basin (EPA, 2023).

There are no EPA recognised rivers or streams draining the Proposed Development Site according to the EPA mapping resource (EPA, 2023). The nearest EPA recognised stream to the Site is the MARSHES_UPPER (IE_NB_06H080570), a 1st order stream located adjacent to part of the long linear section of the Site that runs north along the R172 to join up with the local water mains. This waterbody is mapped as starting just east of the road, but may be culverted underneath it, from developed lands to the west. This stream flows east for ca.600m before it drains into the Inner Dundalk Bay transitional waterbody (IE_NB_040_0100). WFD status for the MARSHES_UPPER stream has been modelled as *Poor* for the assessment period 2016-2021 while the river waterbody risk is currently *Not at risk* of not meeting its Water Framework Directive (WFD) objectives (EPA, 2023). The Inner Dundalk Bay transitional waterbody has been assessed as having *Moderate* status for the assessment period 2016-2021 and is *At risk* of not meeting its WFD objectives.

The Site of the Proposed Development is situated on the Louth groundwater body (IEGBNI_NB_G_019), which is classified as having *Good* status (WFD Status 2016-2021). The aquifer type in the area is *Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones* (PI). The underlying bedrock is mapped by GSI and is classified as *Calcareous red-mica greywacke* (New Code: CLTL). The groundwater rock units underlying the area are also mapped by GSI and are classified as *Silurian Metasediments and Volcanics* (GSI, 2023). The groundwater vulnerability across the Site is mapped as having *Extreme* vulnerability to contamination from human activity, with areas of *Rock at or near Surface or Karst* in the west and north-east of the Site (GSI, 2023).

The subsoil beneath the Site is *Till derived from Lower Palaeozoic sandstones and shales* (GSI, 2023). The SIS National Soils data classifies the Site as *Fine loamy over shale or slate bedrock* (EPA, 2023). According to the Teagasc soil maps the soils beneath the Proposed Development Site are categorised as Deep well drained mineral (Mainly acidic) (GSI, 2023). Corine (2018) land cover at the Site comprises predominantly *Agricultural Area's* with small areas of *Artificial Surfaces* along the R172 road east of the Site.

The nearest EPA water quality monitoring data (the station located along the FANE watercourse), located ca.2.7km south of the Site is summarised in Table 1. The

reported Q-value results indicate that water quality in the HAGGARDSTOWN in the vicinity of the Site is high.

TABLE 1. EPA MONITORING STATIONS AND ASSIGNED Q VALUES

EPA Monitoring Station name	Station Code	Location from Site	Distance from Site	Assigned Q value
FANE - Lurgangreen Br.	RS06F011000	South	2.7 km	4-5 "High"

The Waterbody Status for groundwater, transitional and river water bodies relevant to the Site as recorded by the EPA (2023) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 2.

TABLE 2. WFD RISK AND WATER BODY STATUS

Waterbody Name	Water body; EU code	Location from Site	Distance from Site (km)	WFD water body status (2016-2021)	WFD 3 rd cycle Risk Status	Hydraulic Connection to the Site
Transitional Water Bodies						
Inner Dundalk Bay	IE_NB_040_0100	East	0.02	Moderate	At risk	Adjacent to Site
River Water Bodies						
HAGGARDSTOWN_010	IE_NB_06H080570	North	0.008	Poor	Review	Adjacent to Site
Groundwater Bodies						
Louth Groundwater Body	IEGBNI_NB_G_019	N/A	N/A	Good	Not at Risk	Underlying groundwater-body

4.1.2 Site Drainage

According to the IDR (DOBA, 2023a), there is no formal surface water drainage on Site, with the exception of an existing unnamed watercourse which is evident along the eastern boundary adjacent to the R172 Blackrock Road. This existing watercourse flows northwards through private properties prior to crossing beneath the R172 and

discharging in a north-easterly direction towards the Irish Sea. Further to a review of the topographical survey and geotechnical investigations carried out on Site, it is apparent that surface water run-off from the existing greenfield site, which does not infiltrate to ground, flows overland in an easterly direction towards this existing watercourse.

The ground in the east of the Site, by the proposed main entrance off the R172, was noted to be marshy and waterlogged in the vicinity of this unnamed watercourse during Enviroguide Site visits in February and May 2023, with no distinct watercourse channel observed.

4.2 Relevant Field Survey results

4.2.1 Wintering Bird Surveys

The Site at Haggardstown, Dundalk, Co. Louth supported only one target species foraging on the Site during the winter bird surveys; a Common Snipe (*Gallinago gallinago*) which was flushed on 07/12/2022.

One winter bird survey was conducted each month between October 2022 and March 2023, with each survey comprised of five hourly counts. Survey dates were as follows: 18th October 2022, 2nd November 2022, 7th December 2022, 24th January 2023, 13th February 2023, and 22nd March 2023.

These surveys confirmed very little usage of the Site of the Proposed Development by species listed as SCIs for nearby SPAs. Over the course of the six months surveyed, SCI species other than Gulls noted in flight over the Site included four Lapwing (*Vanellus vanellus*) on 02/11/2022 and one Oystercatcher (*Haematopus ostralegus*) on 07/12/2022.

Common Snipe were identified wintering within the Site. It is very likely that these birds have arrived from further afield to spend the winter in Ireland. During the winter months, up to one million Snipe arrive in Britain and Ireland before departing to breeding grounds in the summer. Most of these birds come from Iceland as well as birds from Scandinavia, to as far east as Russia. Common Snipe is not directly listed as a QI for Dundalk Bay SPA (004026) but would form part of the wetland and waterbird QI.

No Light-bellied Brent Geese (*Branta bernicla hrota*) were observed flying over the Site during the winter surveys.

4.3 Summary Of Relevant European Sites

The following descriptions of the relevant habitats and species occurring within the European site(s) considered in this NIS have been extracted from the Standard Data Forms (EEA, 2023), Site Synopses (NPWS 2014a) and any supporting documents available for the relevant site(s).

4.3.1 Dundalk Bay SAC

The following description of the Dundalk Bay SAC is extracted from the Site Synopsis (NPWS, 2014a) for the site:

“Dundalk Bay, Co. Louth, is a very large open, shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16 km from Castletown River on the Cooley Peninsula in the north, to Annagassan/Salterstown in the south. The bay encompasses the mouths and estuaries of the Rivers Dee, Glyde, Fane, Castletown and Flurry.

*Saltmarsh vegetation occurs in four main areas: at Lurgangreen, Marsh South, Dundalk Harbour and Bellurgan. Two types are represented – Atlantic and Mediterranean salt meadows. The Atlantic salt meadows are commonest and are characterised by Sea-purslane (*Halimione portulacoides*) (often as a dominant band), along with Common Saltmarsh-grass (*Puccinellia maritima*), Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvygrass (*Cochlearia officinalis*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus gerardi*). Common Cord-grass (*Spartina anglica*) is frequent and often dominant over substantial areas. Glassworts (*Salicornia* spp.) occur on the lower zones of the saltmarshes, and in places extend out onto the sandflats. Mediterranean salt meadows are mostly confined to the upper levels of the saltmarshes or along stream sides where they merge with grassland habitats (though the transitional zone is now absent in many places). The habitat contains Sea Rush (*Juncus maritimus*), Sea Arrowgrass (*Triglochin maritima*) and Sea Aster (*Aster tripolium*). The saltmarshes at Lurgangreen and Marsh South are partially fenced and grazed by sheep.*

*Shingle beaches are particularly well represented in Dundalk Bay, occurring more or less continuously from Salterstown to Lurgan White House in the south bay, and from Jenkinstown to east of Giles Quay in the north bay. The shingle is mostly stable, occurring on post-glacial raised beaches. The shingle often occurs in association with intertidal shingle, saltmarsh and or shingle-based grassland. The shingle supports species such as Spear-leaved Orache (*Atriplex prostrata*), Sea Mayweed (*Matricaria maritima*), Sea Beet (*Beta vulgaris* subsp. *Maritima*), Sea Rocket (*Cakile maritima*), Wild Carrot (*Daucus carota*), Sea-holly (*Eryngium maritimum*), Sea Sandwort (*Honkenya peploides*) and Sea Radish (*Raphanus raphanistrum* subsp. *Maritimus*). Yellow Hornedpoppy (*Glaucium flavum*) and Lyme-grass (*Leymus arenarius*) occur here at their most northern locality on the east coast, while the Red Data Book species Sea-kale (*Crambe maritima*) has recently been recorded.*

The extensive sandflats and mudflats (over 4,000 ha) occur and are comprised of ecological communities such as muddy fine sand communities and fine sand community complexes. In the centre of Dundalk Bay there is a gravel community dominated by polychaetes. These habitats host a rich fauna of bivalves molluscs, marine worms and crustaceans and are the main food resource of the tens of thousands of waterfowl (including waders and gulls) which feed in the intertidal area of Dundalk Bay. The saltmarshes are used as high-tide roosts by all of these species, while the grazing birds (notably Brent Goose and Wigeon) feed on the saltmarsh grasses, areas of Zostera and other grassland vegetation. Brent Goose also feed on the mats of green algae on the mudflats. At night the wintering Greylag and Greenland White-fronted Goose, and Whooper Swans, from Stabannan/Braganstown (inland from Castlebellingham) roost in Dundalk Bay.”

The following description of the SAC is extracted from the Quality and importance section of the Natura 2000 Standard Data Form¹ for the site:

“Estuaries and particularly intertidal sand and mud flats are well represented at this site. The site contains the largest expanse of intertidal flats on the east coast. The bay is fringed in places by salt marshes, with good examples of Salicornia sand flats, Atlantic salt meadows and, to a lesser extent, Mediterranean salt meadows. The quality of estuarine habitats is generally good. The site has excellent examples of perennial vegetation of stony banks with the Red Data Book plant Crambe maritima. The site is of high importance for wintering waterfowl, with internationally important populations of Branta bernicla hrota, Calidris canutus and Limosa lapponica. It also supports nationally important populations of a further 16 species including Pluvialis apricaria. The overall site is also of international importance as it regularly has in excess of 20,000 wintering waterfowl.”

4.3.2 Dundalk Bay SPA

The following descriptions of the Dundalk Bay SPA are extracted from the Site Synopsis (NPWS, 2014b) for the site:

“Dundalk Bay is a large open shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16 km from Castletown River on the Cooley Peninsula, in the north, to Annagassan/Salterstown in the south.

The extensive sand flats and mud flats have a rich fauna of bivalves, molluscs, marine worms and crustaceans which provides the food resource for most of the wintering waterfowl. The outer part of the bay provides excellent shallow-water habitat for divers, grebes and sea duck. In summer, it is thought to be a major feeding area for auks from the Dublin breeding colonies. The bay is used at night for roosting by

¹ <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0000455>

wintering flocks of Greylag Goose, Greenland White-fronted Goose and Whooper Swan from Stabannan/Braganstown (inland of Castlebelligham) and other inland sites.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Great Crested Grebe, Greylag Goose, Light-bellied Brent Goose, Shelduck, Teal, Mallard, Pintail, Common Scoter, Redbreasted Merganser, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull and Herring Gull. 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 site is of international importance because it regularly supports an assemblage of over 20,000 wintering waterbirds. It also qualifies as a site of international importance for supporting populations of Light-bellied Brent Goose (370), Knot (9,710), Black-tailed Godwit (1,100) and Bar-tailed Godwit (1,950) - all figures, unless stated otherwise, are five year mean peaks for the period 1995/96 to 1999/2000. A variety of other species occur in numbers of national importance, i.e. Great Crested Grebe (303), Greylag Goose (435), Shelduck (522), Teal (538), Mallard (765), Pintail (117), Common Scoter (581 - five year mean peak for the period 2000/01 to 2004/05), Red-breasted Merganser (121), Oystercatcher (8,746), Ringed Plover (151), Golden Plover (5,967), Grey Plover (204), Lapwing (4,892), Dunlin (11,518), Curlew (1,264) and Redshank (1,659). Other wintering species which occur include Red-throated Diver, Great Northern Diver, Cormorant, Grey Heron, Little Egret, Mute Swan, Wigeon, Goldeneye, Greenshank and Turnstone. The site also supports nationally important populations of three wintering gull species - Black-headed Gull (6,643), Common Gull (551) and Herring Gull (754). In spring and autumn the site attracts a range of passage migrants, including Little Stint, Curlew Sandpiper and Ruff.

Dundalk Bay SPA is one of the most important wintering waterfowl sites in the country and one of the few that regularly supports more than 20,000 waterbirds. Four species occur in numbers of international importance and a further 19 species in numbers of national importance. The regular occurrence of Golden Plover, Bar-tailed Godwit, Red-throated Diver, Great Northern Diver and Little Egret is of particular note as these species are listed on Annex I of the E.U. Birds Directive. Dundalk Bay is a Ramsar Convention site and parts of Dundalk Bay SPA are designated as Wildfowl Sanctuaries."

The following description of the Site is extracted from the Quality and importance section of the Natura 2000 Standard Data Form² for the site:

² <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004026>

“Estuaries and particularly intertidal sand and mud flats are very well represented at this site and support the largest concentration of wintering waterfowl on the east coast (regularly in excess of 20,000 wintering waterfowl). The bay has internationally important populations of Branta bernicla hrota, Calidris canutus, Limosa limosa and Limosa lapponica. It is the top site in the country for Calidris canutus, with over 38% of the national total. A further 13 species have populations of national importance, with particular notable numbers for Haematopus ostralegus (12.4% of national total), Calidris alpina (8.4% of national total) and Vanellus vanellus (7.4% of national total). Dundalk Bay is an important roost site for Anser anser and small numbers of Anser albifrons flavirostris. Shallow bay waters support divers, grebes and diving duck, with nationally important populations of Podiceps cristatus and Mergus serrator. This bay is a regular site for passage waders such as Philomachus pugnax, Calidris ferruginea and Tringa erythropus. It is also an important site for wintering gulls, especially Larus ridibundus and Larus canus. The site provides both feeding and roosting areas for the waterfowl species and habitat quality for most of the estuarine habitats is very good. Wintering bird populations have been well monitored in recent years.”

4.3.3 Qualifying Interests and Conservation Objectives

The QIs/SCIs and their respective conservation objectives for each of the relevant European site(s) are detailed in Table 3 below and Figure 4.

TABLE 3. QUALIFYING INTERESTS (QIs) / SPECIAL CONSERVATION INTERESTS (SCIs) AND THEIR CONSERVATION OBJECTIVES FOR THE RELEVANT EUROPEAN SITES. THE CONSERVATION STATUS OF EACH QI / SCI WAS SOURCED FROM THE RELEVANT STANDARD DATA FORM(S) (SOURCE: EEA, 2023) AND THE LATEST NATIONAL STATUS IS TAKEN FROM THE LATEST ARTICLE 17 REPORT (NPWS, 2019A & 2019B) AND BOCCI³ RESPECTIVELY.

QI / SCI (* = priority habitat)	Conservation Status	National Status	Conservation Objective
Dundalk Bay SAC (000455) (NPWS, 2011)			
1130 Estuaries	B: good conservation	Inadequate	To <u>maintain</u> the favourable conservation condition of these habitats in Dundalk Bay SAC
1140 Mudflats and sandflats not covered by seawater at low tide	B: good conservation	Inadequate	
1220 Perennial vegetation of stony banks	B: good conservation	Inadequate	
1310 <i>Salicornia</i> and other annuals colonizing mud and sand	B: good conservation	Favourable	To <u>restore</u> the favourable conservation condition of these habitats in Dundalk Bay SAC.

³ Birds of Conservation Concern in Ireland (BOCCI) 2020-2026 (Gilbert, Stanbury & Lewis, 2021). The colours represent the species designation on the various BOCCI lists.

QI / SCI (* = priority habitat)	Conservation Status	National Status	Conservation Objective
1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	B: good conservation	Inadequate	To <u>maintain</u> the favourable conservation condition of these habitats in Dundalk Bay SAC
1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	B: good conservation	Inadequate	
Dundalk Bay SPA (004026) (NPWS, 2011; EEA, 2023) ⁴			
Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]	A. conservation excellent	Amber	To <u>maintain</u> the favourable conservation condition of these species in Dundalk Bay SPA.
Greylag Goose (<i>Anser anser</i>) [A043]	B. good conservation	Amber	
White-fronted Goose (Greenland subspecies) (<i>Anser albifrons flavirostris</i>) [A395]	B. good conservation	Amber	
Turnstone (<i>Arenaria interpres</i>) [A169]	B. good conservation	Amber	
Goldeneye (<i>Bucephala clangula</i>) [A067]	B. good conservation	Red	
Great Northern Diver (<i>Gavia immer</i>)	B. good conservation	Amber	
Red-throated Diver (<i>Gavia stellata</i>)	B. good conservation	Amber	
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	A. conservation excellent	Amber	
Shelduck (<i>Tadorna tadorna</i>) [A048]	A. conservation excellent	Amber	

⁴ The Standard Natura 2000 Data Form is accurate to the 2020 update while the Conservation Objectives were published in 2011. As the SPA qualifying/feature species have been revised since 2011, with several species added and removed, there is some inconsistency between the two documents. The full species list included in this table is as per the 2020 Standard Data Form. Conservation objectives are not yet available for the newly added species but are assumed, for the purposes of assessment, to follow the same format as for other feature species.

QI / SCI (* = priority habitat)	Conservation Status	National Status	Conservation Objective
Teal (<i>Anas crecca</i>) [A052]	A. conservation excellent	Amber	
Mallard (<i>Anas platyrhynchos</i>) [A053]	A. conservation excellent	Amber	
Pintail (<i>Anas acuta</i>) [A054]	A. conservation excellent	Amber	
Wigeon (<i>Anas Penelope</i>) [A050]	B. good conservation	Amber	
Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	A. conservation excellent	Amber	
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	A. conservation excellent	Red	
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	A. conservation excellent	Amber	
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	A. conservation excellent	Red	
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	A. conservation excellent	Red	
Lapwing (<i>Vanellus vanellus</i>) [A142]	A. conservation excellent	Red	
Knot (<i>Calidris canutus</i>) [A143]	A. conservation excellent	Red	
Dunlin (<i>Calidris alpina</i>) [A149]	A. conservation excellent	Red	
Curlew Sandpiper (<i>Calidris ferruginea</i>) [A147]	B. good conservation	Red	
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	A. conservation excellent	Red	
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	A. conservation excellent	Red	

QI / SCI (* = priority habitat)	Conservation Status	National Status	Conservation Objective
Curlew (<i>Numenius arquata</i>) [A160]	A. conservation excellent	Red	
Redshank (<i>Tringa totanus</i>) [A162]	A. conservation excellent	Red	
Spotted Redshank (<i>Tringa erythropus</i>) [A161]	B. good conservation	Amber	
Greenshank (<i>Tringa nebularia</i>) [A164]	B. good conservation	Green	
Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	A. conservation excellent	Amber	
Common Gull (<i>Larus canus</i>) [A182]	A. conservation excellent	Amber	
Cormorant (<i>Phalacrocorax carbo</i>) [A017]	A. conservation excellent	Amber	
Ruff (<i>Philomachus pugnax</i>) [A151]	B. good conservation	Amber	
Wetland and Waterbirds [A999]	NA	NA	To maintain the favourable conservation condition of the wetland habitat in Dundalk Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

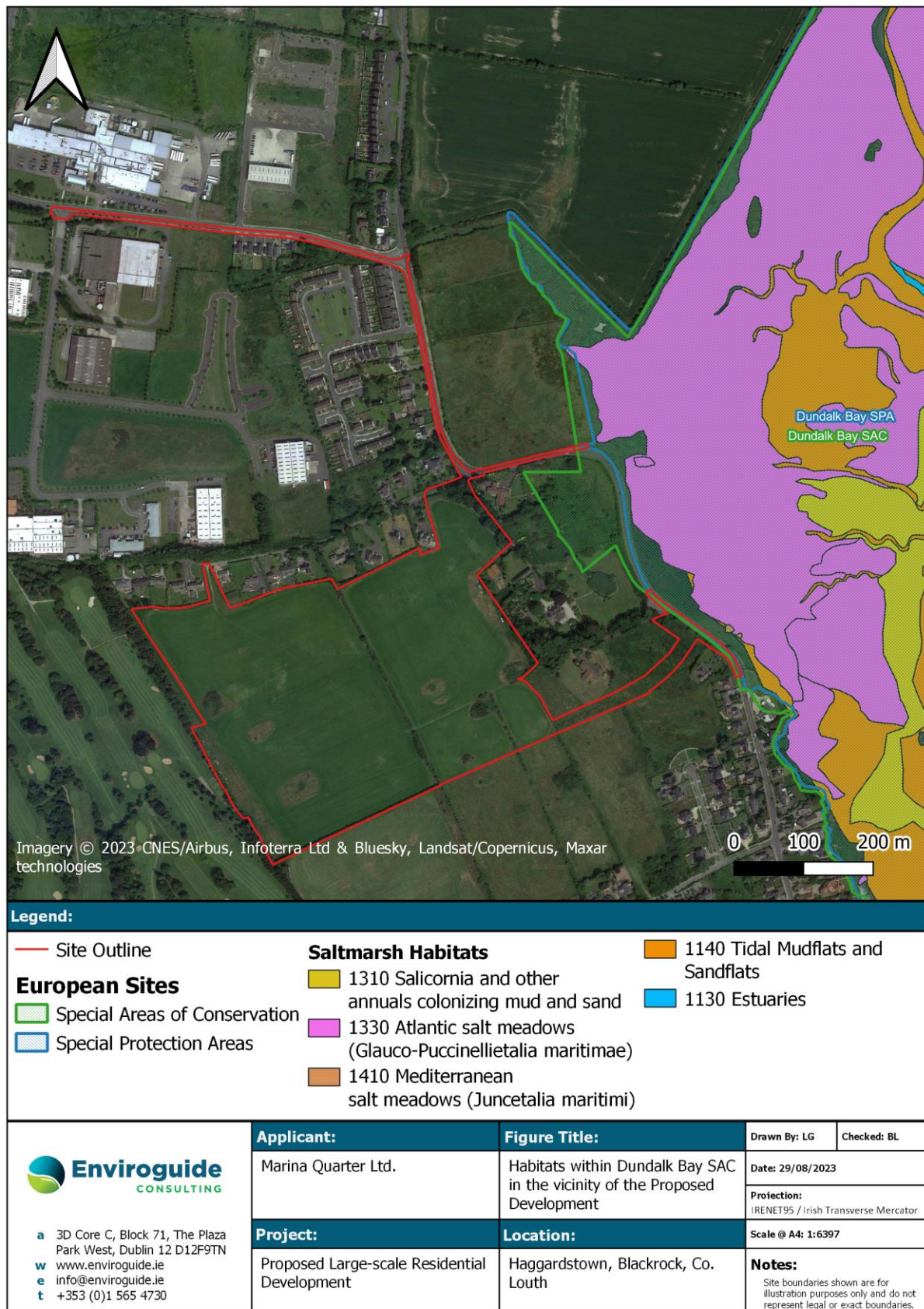


FIGURE 4. DUNDALK BAY SAC AND SPA WITH QI HABITATS IN VICINITY OF THE PROPOSED DEVELOPMENT.

4.4 Impact Prediction

This section follows the S-P-R method as outlined in section 3.5 to identify if and how any of the QIs/SCIs of the relevant European site are linked to the Proposed Development. Once the connections have been identified the potential impacts of the Proposed Development on the Dundalk Bay SAC/SPA in light of their QIs/SCIs and their SSCOs are assessed.

For the purposes of objectivity and clarity, mitigation measures **are not considered in the impact prediction**. This includes all measures that will act limit or eliminate the potential for significant adverse impacts on the relevant European site, including those integrated into the design (e.g., SUDS measures).

4.4.1 Source-Pathway-Receptor Connections

The following elements of the Proposed Development were identified and assessed for their potential to cause likely significant effects on European sites.

Construction Phase *(Estimated duration: 47 months)*

- Uncontrolled releases of silt, sediments and/or other pollutants to air due to earthworks;
- Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies (i.e., the Irish Sea);
- Surface water run-off containing silt, sediments and/or other pollutants into the local groundwater;
- Waste generation during the Construction Phase comprising soils and construction wastes;
- Increased noise, dust and/or vibrations as a result of construction activity;
- Increased dust and air emissions from construction traffic;
- Increased lighting in the vicinity as a result of construction activity; and
- Increased human presence and activity as a result of construction activity.
- Loss of *ex-situ* habitat for SCI waterbirds.

Operational Phase *(Estimated duration: Indefinite)*

- Surface water drainage from the Site of the Proposed Development;
- Foul water from the Proposed Development;
- Increased lighting at the Site and in the vicinity emitted from the Proposed Development; and
- Increased human presence and activity at the Site and in the vicinity as a result of the Proposed Development.

The QIs/SCIs for the relevant European sites are shown on Figure 4 and described in Table 4 below. Descriptions are sourced from the relevant Conservation Objectives and supporting documents.

Where a potential S-P-R link between the Proposed Development and a QI/SCI has been identified, they have been highlighted in green and that QI/SCI will be assessed further in this report.

TABLE 4. THE QUALIFYING INTERESTS (QIs)/SPECIAL CONSERVATION INTERESTS (SCIs) FOR THE RELEVANT EUROPEAN SITE(S), AND THEIR IDENTIFIED S-P-R CONNECTION TO THE PROPOSED DEVELOPMENT (IF ANY). THOSE QIs/SCIs WHERE THE IDENTIFIED S-P-R CONNECTION DEMANDS FURTHER ASSESSMENT OF POTENTIAL IMPACTS ARE HIGHLIGHTED IN GREEN.

QI / SCI	QI /SCI description	S-P-R connection
Dundalk Bay SAC (000455) (NPWS, 2011a)		
1130 Estuaries	Habitat area was estimated at 2799ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive. See marine habitats supporting document for further information. Most of the pressures on estuaries come from various sources of pollution, including domestic wastewater, agriculture and marine aquaculture (NPWS, 2019a). This habitat is located along coast ca.20m east of the Site at its closest point (near the proposed main entrance/bus stop).	<u>Land/Air connection.</u> Due to the proximity of the Site to this habitat, construction related dust will be considered. <u>Hydrological connection.</u> Construction Phase surface water containing pollutants/contaminants may inadvertently reach the estuary during the construction of the new surface water headwall in the north east of the Site, and the main entrance and bus stop in the east of the Site.
1140 Mudflats and sandflats not covered by seawater at low tide	Habitat area was estimated at 4375ha using OSI data. See marine habitats supporting document for further information. Threats include pollution from agricultural, forestry and wastewater sources, as well as impacts associated with marine aquaculture, particularly the Pacific oyster (<i>Magallana gigas</i>) (NPWS, 2019a). At its closest point this habitat is present ca.20m east of the Site (near the proposed main entrance/bus stop).	Operational surface water from the Proposed Development will be discharged via new headwall and infrastructure to the Bay.
1220 Perennial vegetation of stony banks	Exact current area unknown, but shingle is known to occur almost continuously from Salterstown to Lurgan White House in the south bay and from Jenkinstown to east of Giles Quay in the north bay. Shingle is estimated to cover 12ha. Probably less than 25% of this would be vegetated. See coastal habitats supporting document for further details. Threats include pressures associated with coastal defences (which can interfere with sediment dynamics), recreation and shingle removal (NPWS, 2019a).	None. These habitats have been mapped only along the headland located to the north-east of the Proposed Development. Due to the significant intervening distance involved (ca.15km), the nature and scale of the Proposed Development, and the land and marine buffer that separates the Site from the nearest recorded locations of this habitat, it is not considered likely that any impacts from the

QI / SCI	QI /SCI description	S-P-R connection
	The nearest mapped location of this habitat to the Proposed Development is located ca.15km north-east of the Site.	Proposed Development reach these habitats, via land/air, hydrological or hydrogeological means.
1310 <i>Salicornia</i> and other annuals colonizing mud and sand	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped, giving a total estimated area of 35ha for <i>Salicornia</i> mudflat, which is one of the largest areas of this habitat in the country. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details. As this habitat is dominated by annuals it can be ephemeral or transient in nature and is highly susceptible to erosion. Its distribution can vary considerably from year to year and it can move in response to changing conditions, e.g. in estuaries with shifting river channels. However, no significant pressures were identified that would affect the long-term viability of the habitat (NPWS, 2019a). At its closest point this habitat is present ca.205m east of the Site (offshore near the proposed main entrance/bus stop).	None. This habitat is located largely along the seaward side of the salt marshes of Dundalk Bay east of the Proposed Development. At its closest point this habitat is present ca.205m east of the Site (offshore near the proposed main entrance/bus stop). The main threat to this habitat type is the spread of invasive common cord-grass (<i>Spartina anglica</i>) and erosion; neither of which will be exacerbated by the Proposed Development.
1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was mapped and additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area for Atlantic salt meadow of 379.98ha. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further information. The Overall Status of this habitat is assessed as Inadequate, due mainly to pressures from agriculture, including ecologically unsuitable grazing regimes and land reclamation, and the invasive non-native species common cord-grass (NPWS, 2019a). At its closest point this habitat is present ca.15m east of the Site (from the proposed surface water headwall/outfall located to the north-east of the main Site area).	<u>Land/Air connection.</u> Due to the proximity of the Site to this habitat, construction related dust will be considered. <u>Hydrological connection.</u> Construction Phase surface water containing pollutants/contaminants may inadvertently reach these habitats during the construction of the proposed main entrance and bus stop in the east of the Site along the R172 road.
1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	Based on data from the Saltmarsh Monitoring Project (McCorry and Ryle, 2009). One sub-site (Dundalk Bay) was	

QI / SCI	QI /SCI description	S-P-R connection
	mapped, giving a total estimated area of 0.045ha for Mediterranean salt meadow. NB further unsurveyed areas maybe present within the site. See coastal habitats supporting document for further details. The Overall Status of this habitat is assessed as Inadequate, mainly due to pressures associated with agriculture, including overgrazing, undergrazing and land reclamation (NPWS, 2019a). At its closest point this habitat is present ca.18m east of the Site (offshore near the proposed main entrance/bus stop).	
Dundalk Bay SPA (004026) (NPWS, 2011a)		
SCI Bird Species	As detailed in the SPA's Standard Data Form⁵, the bay has internationally important populations of <i>Branta bernicla hrota</i>, <i>Calidris canutus</i>, <i>Limosa limosa</i> and <i>Limosa lapponica</i>. It is the top site in the country for <i>Calidris canutus</i>, with over 38% of the national total. A further 13 species have populations of national importance, with particular notable numbers for <i>Haematopus ostralegus</i> (12.4% of national total), <i>Calidris alpina</i> (8.4% of national total) and <i>Vanellus vanellus</i> (7.4% of national total). Dundalk Bay is an important roost site for <i>Anser anser</i> and small numbers of <i>Anser albifrons flavirostris</i>. Shallow bay waters support divers, grebes and diving duck, with nationally important populations of <i>Podiceps cristatus</i> and <i>Mergus serrator</i>. This bay is a regular site for passage waders such as <i>Philomachus pugnax</i>, <i>Calidris ferruginea</i> and <i>Tringa erythropus</i>. It is also an important site for wintering gulls, especially <i>Chroicocephalus ridibundus</i> and <i>Larus canus</i>. The site provides both feeding and roosting areas for the waterfowl species and habitat quality for most of the estuarine habitats is very good. As detailed in the NPWS supporting document for Dundalk Bay SPA (NPWS, 2011b), the SPA is divided into a number of subsites that are targeted for ongoing monitoring as part of the Irish Wetlands Bird (IWeBS) Surveys. The I-WeBS subsites relevant to the Site of the	<u>Land/Air connection.</u> Due to the proximity of the Site to this habitat, construction related dust, noise and visual disturbance due to human presence during the Construction Phase will be considered. <u>Hydrological connection.</u> Construction Phase surface water containing pollutants/contaminants may inadvertently reach the habitats these waterbirds rely on for foraging and roosting, during the construction of the new surface water headwall in the north-east of the Site, and the main entrance and bus stop in the east of the Site. Operational surface water from the Proposed Development will be discharged via new headwall and infrastructure to the Bay. <u>Human connection</u> The Proposed Development will result in an increase in population within the Blackrock/Dundalk area, which could lead to increased recreational pressure on waterbirds using the SPA.

⁵ <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004026>

QI / SCI	QI /SCI description	S-P-R connection
	Proposed Development due to proximity are listed below and shown in Figure 5: - Dundalk Bay, Marsh South (OZ495). - Dundalk Bay, Blackrock Corniche (OZ496). A number of roosts were recorded along the coast in proximity to the eastern extent of the Proposed Development (further information provided in the following sections).	However, significant disturbance impacts are deemed unlikely, as discussed in section 4.4.2.5. The potential for a loss of <i>ex-situ</i> habitat in the form of the Site itself was screened out at the AA Screening stage (See Enviroguide (2023) which accompanies this application under separate cover. This is discussed further in section 4.4.2.4 of this NIS.
Wetland and Waterbirds [A999]	As the Birds Directive pays particular attention to wetlands, which form part of this SPA, wetland habitats and associated waterbird species are of special conservation interest. This SCI overlaps with the QI habitats of Dundalk Bay SPA and are located within the bay, adjacent to the east of the Proposed Development.	

4.4.2 Potential impacts of the Proposed Development on Key Habitats and Species

4.4.2.1 Construction Phase Surface Water Pollution

The installation of the surface water drainage infrastructure and headwall in the north-east of the Site, along the existing drainage channel that runs west-east along the northern boundary of the R172, could cause contaminated surface waters to discharge into the marginal habitats of Dundalk Bay SAC/SPA in the absence of mitigation.

The eastern boundary of the Site, at the Proposed Development entrance off the R172, is an existing wetland with an unamend watercourse which discharges in a northerly direction parallel to the R172. Existing culverts have been constructed over the watercourse at the entrances to the dwellings along the R172. The installation of the proposed main access road in this marshy location, along with the construction of the potential bus stop along the eastern side of the R172, could result in contaminated surface waters entering Dundalk Bay SAC/SPA in the absence of mitigation.

4.4.2.2 Construction Phase Dust Deposition

Due to the proximity of the Site to the SAC/SPA, there is the potential for dust generated during the Construction Phase to deposit in the SAC/SPA and adversely affect the ecology of these protected sites.

Dust from construction sites deposited on vegetation can cause ecological stress to plants, adversely affecting photosynthesis and other biological functions. Rainfall, although removing the deposited dust from foliage, can also rapidly leach chemicals in the dust into the soil. Plant communities near short-term works are likely to recover within a year of the dust soiling stress ceasing (Holman et al., 2014). However, large scale construction sites may give rise to dust deposition over an extended period of time and have more significant effects on vascular plant communities.

According to Institute of Air Quality Management Guidance on the Assessment of Mineral Dust Impacts for Planning (IAQM, 2016), the experience of the IAQM Working Group together with published studies and anecdotal evidence on the change in both airborne concentrations and the rate of deposition with distance, suggests that dust impacts will occur mainly within 400m of the operation, even at the dustiest of sites. Adverse impacts from dust generating activities are uncommon beyond 250m, and continuous or stark concerns about dust are most likely to be experienced within 100m of the dust source; the greatest potential for high rates of dust deposition and elevated particulate matter (PM10) concentrations occurs within this distance.

Meteorological conditions greatly affect the level of dust emissions and subsequent deposition downwind of the source; the most predominant being rainfall and wind speed. Adverse impacts can occur in any direction from a site; however, they are more likely to occur downwind of the prevailing wind direction and/or close to the site. Relatively high levels of moisture in the surrounding air, soils, and precipitation helps to suppress dust due to the cohesive properties of water between dust particles. The least favourable meteorological conditions for dust generation would typically be warm days with strong winds and low precipitation.

Much of the main body of the Site of the Proposed Development is within 400m of the SAC/SPA, with some parts within the 250m and 100m ranges. The sensitive receptors in this case are the SAC/SPA, both of which are located to the east of the Site. In this case, wind direction will most likely prevail from the southwest. Dry days with moderate to high windspeeds (above 5m/s (7-10 knots)) are the conditions which are most likely to result in fugitive dust emissions. Receptors such as the SAC/SPA located to the east of the Site would require prevailing winds from the west to be potentially impacted by fugitive dust emissions. According to the desk study and modelling conducted as part of Chapter 11 of this EIAR (Air Quality and Climate), for receptors to the east of the Site, the frequency of winds (>5m/s) occurring from the direction of the dust source on dry days is 2.73%. Therefore, appropriate conditions for fugitive dust emissions at these receptors are highly infrequent and it is expected that adequate mitigation measures, as outlined in Chapter 11 and this Chapter will minimise nuisance dust emissions with the potential to result in significant adverse impacts.

4.4.2.3 Operational Phase Surface Water Pollution

The existing drainage channel located to the north-east of the main Site area will accommodate the main surface water discharge channel for the Proposed Development's operational drainage network. A proposed culvert links to this existing drainage channel which ultimately discharges into Dundalk Bay and to QI listed habitats for this SAC (1330 & 1410) to the immediate north-east of the R172. Operational surface waters could carry hydrocarbons, detergents and other harmful contaminants associated with an active residential development, into the SAC/SPA, in the absence of mitigation.

4.4.2.4 Construction Phase Disturbance of SPA Waterbirds

The Proposed Development entails the development of land in proximity to the Dundalk Bay coastline, with a proposed bus stop located along the R172 road; on the edge of the SAC/SPA. There is therefore the potential for disturbance impacts (e.g., lighting, construction noise, visual stimulus) to roosting/foraging waterbird species along this stretch of coastline during the Construction Phase of the Proposed Development in the absence of mitigation.

As detailed in Table 4, the two waterbird survey subsites located adjacent or in proximity to the Proposed Development are 'Dundalk Bay, Marsh South' (OZ495) and 'Dundalk Bay, Blackrock Corniche' (OZ496) (see Figure 5).

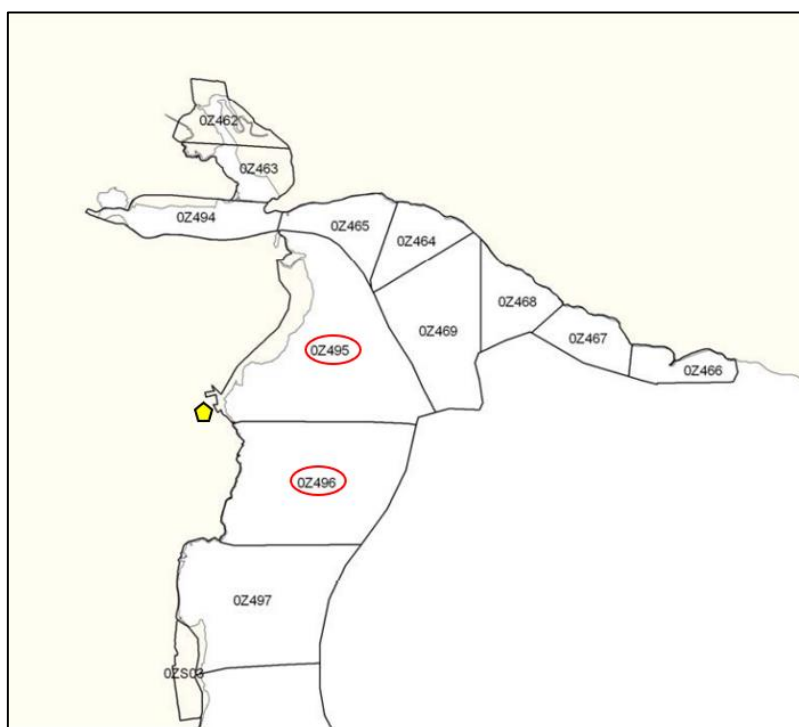


FIGURE 5. IMAGE EXTRACTED FROM NPWS (2011c) SHOWING THE I-WeBS SUBSITES (IN RED) LOCATED ADJACENT TO THE PROPOSED DEVELOPMENT (YELLOW SYMBOL).

A 2009/10 waterbird survey programme was designed to investigate how waterbirds are distributed across coastal wetland sites during the low tide period. The surveys ran alongside and are complementary to the I-WeBS which is a survey undertaken primarily on a rising tide or at high tide.

Based on the roost survey (1st March 2010) of the two listed subsites, they were considered to be two of the four main areas of saltmarsh habitat, mostly comprising Atlantic Sea Meadows and variable amounts of Common Cordgrass (*Spartina anglica*), that provide important roosting sites for waterbirds. The species recorded roosting at both sites during the 2009/11 surveys are listed below in Table 5.

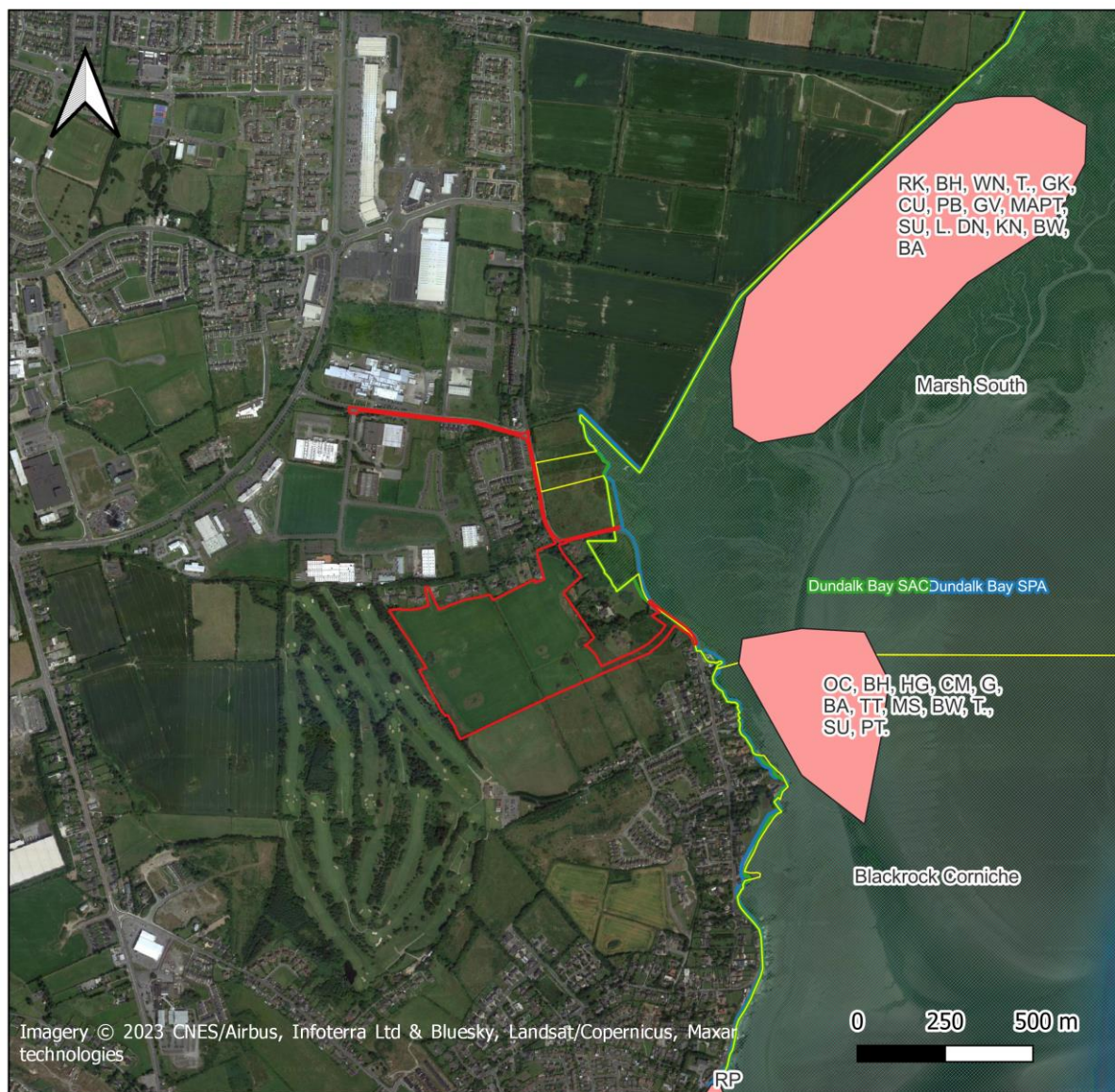
Although this data provided by the NPWS is somewhat outdated, it shows that waterbirds do roost along parts of the SPA in proximity to the Site of the Proposed Development and provides an indication of the types of waterbird species that may be subject to disturbance during its Construction Phase.

TABLE 5. SPECIES RECORDED ROOSTING AT THE TWO CLOSEST SUBSITES TO THE PROPOSED DEVELOPMENT DURING THE 2009/10 WATERBIRD SURVEY PROGRAMME (AS PER NPWS, 2011b)

Subsite Name	Subsite Code	Species Recorded Roosting
Dundalk Bay, Marsh South	OZ495	- Bar-tailed Godwit (<i>Limosa lapponica</i>) - Black-tailed Godwit (<i>Limosa limosa</i>)

		• Oystercatcher (<i>Haematopus ostralegus</i>) • Brent Goose (Light-bellied) (<i>Branta bernicla hrota</i>) • Redshank (<i>Tringa totanus</i>) • Teal (<i>Anas crecca</i>) • Wigeon (<i>Anas Penelope</i>)
Dundalk Bay, Blackrock Corniche	0Z496	• Bar-tailed Godwit (<i>Limosa lapponica</i>) • Black-tailed Godwit (<i>Limosa limosa</i>) • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) • Common Gull (<i>Larus canus</i>) • Dunlin (<i>Calidris alpina</i>) • Grey Plover (<i>Pluvialis squatarola</i>) • Herring Gull (<i>Larus argentatus</i>) • Knot (<i>Calidris canutus</i>) • Mute Swan (<i>Cygnus olor</i>) • Oystercatcher (<i>Haematopus ostralegus</i>) • Pintail (<i>Anas acuta</i>) • Ringed Plover (<i>Charadrius hiaticula</i>) • Shelduck (<i>Tadorna tadorna</i>) • Teal (<i>Anas crecca</i>) • Turnstone (<i>Arenaria interpres</i>)

It is noted in the supporting document (NPWS, 2011b) that the total numbers of waterbirds and number of roost locations should not be regarded as absolute, as gaining accurate counts was difficult because some waterbirds were likely underestimated by being obscured by saltmarsh vegetation while others made frequent movements during the survey. Subsite 0Z495 (Marsh South) in particular is difficult to count as waterbirds re-shuffle their positions as the tide advances. This large saltmarsh has two main roosting areas at the northern and southern extents, and birds move from the main southern area to the northern area as the tide moves higher through the saltmarsh. Indicative locations of the roosts recorded in proximity to the Site of the Proposed Development during the 2009/10 waterbird survey programme are displayed in Figure 6 below. Roost data used is taken from the NPWS SSCO GIS datasets (NPWs, 2023a), and is also available to view via the NPWS SSCO web application (NPWs, 2023b).



Legend:

— Site Outline

European Sites

Special Areas of Conservation

Special Protection Areas

2009/10 Waterbird Survey Programme
Roost Locations (with BTO Codes of species)

2009/10 Waterbird Survey Programme
Count Subsites

 Enviroguide CONSULTING a 3D Core C, Block 71, The Plaza Park West, Dublin 12 D12F9TN w www.enviroguide.ie e info@enviroguide.ie t +353 (0)1 565 4730	Applicant:	Project:	Drawn By: LG	Checked: BL
	Marina Quarter Ltd.	Proposed Large-scale Residential Development	Date: 29/08/2023	
	Figure Title:		Projection: IRENET95 / Irish Transverse Mercator	
	2009/10 Waterbird Survey Programme subsites, roost locations and recorded species (BTO Codes) within proximity to the Proposed Development.	Location: Haggardstown, Blackrock, Co. Louth	Scale @ A4: 1:15395	
			Notes: Site boundaries shown are for illustration purposes only and do not represent legal or exact boundaries.	

FIGURE 6. 2009/10 WATERBIRD SURVEY PROGRAMME SUBSITES, ROOST LOCATIONS AND RECORDED SPECIES (BTO CODES) WITHIN PROXIMITY TO THE PROPOSED DEVELOPMENT.

With regard to *ex-situ* usage of the Site of the Proposed Development itself, and as screened out in the AA Screening for this Proposed Development (Enviroguide, 2023), it is noted that minimal usage by waterbird species was recorded over the course of the 2022/23 winter during the site-specific winter bird surveys conducted by Enviroguide. One Common snipe was flushed at the Site over the course of the entire winter. The Site is currently comprised of high sward, rank grassland and tall ruderal species, and is not considered overly suitable as *ex-situ* waterbird habitat. No significant impacts involving loss of *ex-situ* habitat are thus envisaged.

4.4.2.5 Operational Phase Disturbance of SPA Waterbirds

The Proposed Development will result in an increase in population in the Blackrock/Dundalk area, with 502 residential units proposed. This equates to an increase of ca.1,364 people in the area. An increase in local population could result in increased recreational usage of Dundalk Bay; resulting in knock on effects on SCI waterbirds within the SPA as a result of associated increased recreational pressure.

The SPA supporting document (NPWS, 2011b) highlights a number of activities that are the source of disturbance impacts to waterbirds at the two subsites located along the stretch of coastline east of the Proposed Development, with both subsites subject to a moderate level of disturbance. For subsite 0Z495 Marsh South; 'Firing Range' was the main disturbance source for which a peak disturbance level was recorded. For 0Z496 Blackrock Corniche; 'Bathing & general beach recreation' and 'Wildfowling' elicited the highest disturbance scores.

The Proposed Development would not be expected to contribute significantly to the 'Firing Range' and 'Wildfowling' disturbance sources in the area, however, a contribution to the 'Bathing & general beach recreation' might be expected of a new residential development including families and children.

Although there may be some contribution to a recreational usage of the bay as a result of a general increase in local population, it is not considered that this would be of a significant nature. There is no direct pedestrian access proposed between the Proposed Development and the bay containing the SPA. The R172 Blackrock Road provides a barrier between the Proposed Development and the shoreline, with habitats along the eastern side of the road comprising of a tall grassy verge and saltmarsh. New residents are far more likely to utilise more accessible/ suitable coastal areas for recreation to the north and south, rather than the saltmarshes and mudflats located directly to the east of the Site. Furthermore, there is a considerable portion of the centre of the Site zoned as open space, with a large park 'The Loakers Park' proposed. The majority of the recreational needs of the future residents would be expected to be met by this large landscaped open space provided 'on their doorstep'. This can be considered as embedded or 'designed-in' mitigation (as opposed to specific, focused mitigation) of any minor recreational pressure impacts that might arise from the Proposed Development.

4.4.3 In-combination Effects

4.4.3.1 Existing Planning Permissions

Plans and projects in the surrounding area that could have the potential to result in cumulative impacts were reviewed from data sources including:

- An Bord Pleanála website, <http://www.pleanala.ie/>.
- EIA Portal, as provided by the Department of Housing, Planning and Local Government
<https://housinggov.ie/maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71f1>
- MyPlan.ie, as provided by the Department of Housing, Local Government and Heritage in conjunction with Irish Local Authorities. <https://myplan.ie/>

Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause significant effects on SCI/Qis associated with Dundalk Bay SAC/SPA. Long-term developments granted outside of this time period were also considered where applicable.

Potential in-combination effects are largely linked to combined water quality degradation in Dundalk Bay in the absence of appropriate mitigation. The potential for likely significant effects arising from foul water generated by the operation of the Proposed Development has been screened out. It is noted that the Proposed Development in itself is unlikely to cause any significant adverse impacts to European Sites in Dundalk Bay as a result of operational foul water; due to there being sufficient remaining treatment capacity at the Dundalk WwTP (5,493PE) as stated in the latest available AER for the facility (UÉ, 2022).

It is noted that UÉ are responsible for whether the receiving drainage infrastructure has the capacity to facilitate a proposed development and also for ensuring that public wastewater infrastructure is operating to a satisfactory level in terms of wastewater treatment. Once the receiving WwTP is operating effectively, there is no potential for likely significant cumulative effects involving foul water generated by the Proposed Development.

TABLE 6. ASSESSMENT OF POTENTIAL IN-COMBINATION EFFECTS OF THE PROPOSED DEVELOPMENT AND OTHER DEVELOPMENTS IN THE VICINITY OF THE SITE

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
Application Number: 16803 and 19171 / TA15.303891 (SHD)	16/803 Inner Relief Road: Mixed Use Development Construction of 1 no. office building, 2 no. buildings for office, research, and development (R&D), 5 no. buildings for R&D, science, and technology, 3 no. buildings for student housing (300 no. bedrooms) and all associated site development works.	Ca.800m west of the Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. ABP confirmed an AA Screening was prepared for planning and

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
	19/171 / TA15.303891: Dublin Road: Residential Development (SHD) Construction of 142 no. residential units, a creche (122 sq. m), community room (122 sq. m) and all associated site development works		screened out impacts to Dundalk Bay SAC/SPA.
Application Number: 1744	Fairways Hotel: Mixed use development Construction of 48 no. residential units, extension, and alteration to the hotel to provide a total of 102 no. bedrooms and all associated site development works.	Ca. 1km southwest of the Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. An AA Screening was prepared for planning and screened out impacts to Dundalk Bay SAC/SPA.
Application Number: 181024 / TA15.303253 (SHD)	Old Golf Links Road: Residential Development (SHD) Construction of 158 no. residential units, a creche facility and all associated site development works.	Ca. 740m south-west of Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. An NIS was prepared for planning which included mitigation measures to protect the water quality at Dundalk Bay SAC/SPA during the works.
Application Number: 19183	Cnoc na Mara / Blackrock Cove: Residential Development (Amendments) Construction of 39 no. residential units as part of a 144 residential unit development by way of amendment to Reg. Ref. 08/650 (as extended by Reg. Ref. 13/379 and varied by Reg. Ref. 14/450, 15.244462, 15/658 and 17/784 and all associated site development works. Note: The house types have since been since amended by Reg. Ref., 20/429 and the development commenced on this basis.	Ca.280m south of the Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. Impacts to Dundalk Bay SAC/SPA were screened out as part of this application and its parent application 14/450.
Application Number: 19/590 / TA15.304782 (SHD)	The Subject Site – Blackrock Road, Haggardstown: Residential Development (SHD) Previous planning permission on the subject site for the construction of 483 no. residential units, a childcare facility (277 sq. m) and all associated site development works.	The Site of the Proposed Development itself.	The previously granted development at the Site in question has not progressed and will be superseded by this current proposed application at the Site.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
			This previous application was accompanied by a NIS which entailed the mitigation measures required to prevent any impacts to Dundalk Bay SAC/SPA. An NIS has been prepared for the current application and will accompany it under separate cover.
Application Number: 20696 TA15.308135 (SHD)	Earlsfort Dublin Road, Haggardstown: Residential Development (SHD) Construction of 257 no. residential units, a creche and all associated site development works.	Ca. 1.7km south-west of Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. An NIS was prepared for planning which included mitigation measures to protect the water quality at Dundalk Bay SAC/SPA during the works.
Application Number: 20981	Green Park: Mixed Use Development (EOD) Extension of duration of Reg. Ref. 15/285 for the construction of 4 no. blocks of student housing (189 no. bedrooms), a nursing home (127 bedrooms), a research, development, and training centre (12,286 sq. m) and all associated site development works.	Ca. 850m to the north-west	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged.
Application Number: 2122	Marlmount Housing Development: Residential Development (Amendments) Construction of 62 no. residential units by way of amendment to the proposed house types, details and layout provided by Reg. Ref. No. 19/804 and all associated site development works.	Ca. 1.4km south-west of Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. An AA Screening was prepared for planning and screened out impacts to Dundalk Bay SAC/SPA.
Application Number: 211032	The Loakers, Blackrock Road / Bóthar Maol: Residential Development Construction of 29 no. residential units, pedestrian access, and new footpath onto Bóthar Maol and new surface water sewer pipe on Blackrock Road together with all associated site development works.	Ca. 75m north of the Site's main body.	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. An NIS was prepared for planning which included mitigation measures to

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
			protect the water quality at Dundalk Bay SAC/SPA during the works.
Application Number: 22583	Haynestown, Dublin Road: Residential Development Construction of 55 no. houses and all associated site development works.	Ca. 1.7km south-west of the Site.	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged. An NIS was prepared for planning which included mitigation measures to protect the water quality at Dundalk Bay SAC/SPA during the works.
Application Number: 1966	Retention of extensions and alterations to an existing dwelling house, 3 no. outdoor seating areas, 2 no. structures for the storage of timber firewood, timber garden shed and associated site development works.	Located directly north of the Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged.
Application Number: 14191	Permission for completion of 6 no dwelling houses previously granted planning permission under planning ref no 07/1329 (4 no 2 storey semi-detached dwelling houses & 2 no 2 storey detached dwelling houses at site no's 1,2,3, 21, 22 & 23)	Ca.900m southwest of the Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged.
Application Number: 2256	Outline permission for 2 no. new dwelling houses and all associated site works	Ca.1.2km southwest of the Site	Having regard to the nature and scale of the development, no significant in-combination effects are envisaged.
Application Number: 22127	Marlmount Housing Development Permission for development on 2 no. parcels of land with combined site area of 2.53 hectares (ha) at the eastern and western extent of the Marlmount Housing Development consisting of the following: (1) In the eastern parcel measuring 0.89 ha, construction of 18 no. 2 storey dwellings comprising 1 no. detached 5 bedroom house (type D), 5 no. detached 4 bedroom houses (type B) and 12 no. semi-detached 4 bedroom	Ca.1.7km southwest of the Site	No EIA was conducted as the proposal was considered sub-threshold. The AA screening submitted as part of this project (under a different application number: 06/1075) concluded that this development will not adversely impact the integrity of any European sites, either alone or in combination with other

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
	houses (10 no. type S and 2 no. type S1) at the following addresses: No.'s 29, 30, 31, 32, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60 and 61 Marlmount Court, together with 1,436sqm public open space and 10 no. bicycle parking spaces, construction of the local access road, landscaping and all associated site development works. (2) In the western parcel measuring 1.64ha, construction of 35 no. 2 storey dwellings comprising 3 no. detached 4 bedroom houses (type Q), 23 no. semi-detached 4 bedroom houses (3 no. type Q, 18 no. type S and 2 no. type S1) and 9 no. semi-detached 3 bedroom houses (type P) at the following addresses: no.'s 1 - 35 Marlmount Close (inclusive), a 2 storey creche facility with a gross floor area of 490sqm, 20 no. ancillary car parking spaces and 22 no. covered bicycle spaces to serve staff and children drop-off/pick-up, together with 2400sqm of public open space, construction of the local access road, 3 no. visitor car parking spaces, landscaping and all associated site development works		projects. Having access to mains water and public sewerage schemes, and the distance from the Proposed Development no significant in-combination effects are envisaged.
Application Number: 19804	Marlmount Housing Development Permission for development at lands located within the Marlmount Housing Development, Marlbog Road, all in the townland of Haggardstown. The development will consist of the following: 1) Construction of 16 no. 2 storey 3 bedroom houses (Type P) at the following addresses: No.'s 6,7,8,10,29,30,34,35,42,43,48,49,56, 57,62 and 63 Marlmount Park; 2) Construction of 2 no. 2 storey 4 bedroom houses (Type Q) at the following addresses: No.'s 9 and 11 Marlmount Park; 3) Construction of 20 no. 2 storey 3 bedroom houses (Type R) at the following addresses: No.'s 12,13,14,15,16,17,18,19,20,21,32,33, 44,45,46,47,58,59,60 and 61 Marlmount Park; and 4) Construction of 24 no. 2 storey 3 bedroom houses (Type S) at the following addresses:	Ca.1.6km southwest of the Site	Further Information (FI) was issued in relation to this development. Information was requested regarding water connections and flooding issues. The project is deemed to not pose any threat to the integrity of Natura 2000 sites once Irish Water connections to the existing urban water systems is in place. Planning was granted subject to 24 conditions. Having regard to the distance from the Proposed Development no significant in-combination effects are envisaged.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
	No.'s 22,23,24,25,26,27,28,31,36,37,38,39, 40,41,50,51,52,53,54,55,64,65,66 and 67 Marlmount Park.		
Application Number: 19232	Permission for a new Advance Technology Building. Permission is also sought for signage, new timber post and rail site boundaries, car parking, cycle shelter, landscaping, underground water storage tank, ESB substation/switch room and all associated site works. The development has been the subject of Screening for Appropriate Assessment and Natura Impact Statement in accordance with Part XAB of the Planning and Development Act 2000 (as amended) and under Regulation 42 of the Birds and Natural Habitats Regulations 2011 (as amended).	Ca.1.8km southwest of the Site	Noted by planners as a sub-threshold development for EIA. Planners note no concerns re: this development and Natura 2000 sites. The site is not located in a flood zone, and the development will connect to existing water infrastructure via Irish Water. Proposed Development no significant in-combination effects are envisaged.
Application Number: 19103	Permission for development to consist of raising the existing level of lands with imported engineering grade fill material in order to facilitate the future construction of a sports stadium. The works will include the provision of a temporary site entrance, temporary security fencing, temporary internal haul roads, temporary wheel wash and all associated site development works.	Ca.700m north of the main Site, and ca.200m north of the northern access road.	Large-scale development given planning permission subject to 9 conditions. Planner notes the proximity of 19103 to Dundalk Bay SAC/SPA/RAMSAR and pNHA. The proposed site is noted as vulnerable to coastal flooding. Planners deem, following FI and the submission of the AA screening report, that this development will not impact any Natura 2000 site. It is envisaged that, particularly during the Construction Phase, there is the potential for environmental degradation, particularly of water quality and associated impacts on Dundalk Bay SAC/SPA and a result of the Proposed Development, and this project 19103, in the absence of appropriate mitigation.

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
N/A	Louth County Council: Waste works Wastewater from the Proposed Development will drain northwards to the existing Coes Road Pumping Station prior to being pumped to the Dundalk Waste Water Treatment Plan (WwTP). The Uisce Éireann Confirmation of Feasibility (CoF) notes that upgrades to Coes Road Pumping Station are planned for 2027 at which point there will be capacity for the Proposed Development. The proposed 10-year permission provides adequate time for this infrastructure to be completed in advance of construction of the 502 No. residential units in a worst-case scenario. Alternatively, the Louth Co. Co. Draft Development Contribution Scheme (DCS) 2023 (which has been prepared pursuant to Section 48 of the Planning & Development Act 2000 (as amended)), has identified surface water improvement works as public infrastructure which will be funded through the payment of financial contributions and undertaken by Louth Co. Co. Therefore, capacity in the existing Coes Road WwPS network catchment could alternatively be provided through DCS funded surface water improvement works undertaken by Louth Co. Co. in advance of the IW Coes Road WwPS upgrade works in 2027.	N/A	No significant in-combination effects are envisaged. It is noted that these upgrades are not within the purview or control of the applicant, and that UÉ are responsible for whether the receiving drainage infrastructure has the capacity to facilitate a proposed development. Once the receiving WwTP is operating effectively, there is no potential for likely significant cumulative effects involving foul water generated by the Proposed Development.
ABP No. 316990/ LCC Case Reference: 2364	Bellfield, Haggardstown Construction of a 183 no. Large-Scale Residential Development in Bellfield, Haggardstown, Dundalk.	Ca.1.2km south-west of the Proposed Development.	No significant in-combination effects are envisaged.

4.4.3.2 Relevant Policies and Plans

The local policies and plans detailed above were reviewed and considered for possible in-combination effects with the Proposed Development. Each of these plans has undergone AA, and where potential for likely significant effects has been identified (e.g., in the case of the Louth County Development Plan), an NIS has been prepared which identifies appropriate mitigation. As such, it is considered that the plans and policies listed will not result in in-combination effects with the Proposed Development. The Louth County Development Plan 2021-2027 has directly addressed the protection of European Sites and biodiversity through specific objectives. The above listed plans are not being relied upon to rule out potential significant effects on European sites.

4.5 Avoidance and Mitigation Measures

The following sections outline the avoidance and mitigation measures identified to eliminate the potential for significant adverse impacts on the relevant European sites. Once the recommended measures outlined in the following sections are implemented in full, no adverse impacts on the relevant European sites or their QIs/SCIs are anticipated as a result of the Proposed Development. These mitigation measures will be included in a Construction and Environmental Management Plan (CEMP) that will be prepared prior to commencing works by the appointed construction contractor.

4.5.1 Summary of Potential Effects

The main impact pathways to be considered are listed below and can be collectively summarised as; pollution of the SAC/SPA, dust deposition and disturbance impacts on waterbird species within the SPA. These impact pathways are as follows:

- **Pollution of the SAC/SPA** – earthworks and construction activities will mobilise silts and sediments which present a risk of contamination to the SAC and SPA through surface water drainage during the Construction Phase.
- **Pollution of the SAC/SPA** – construction activities will generate waste streams which present a risk of contamination (fuels and other hydrocarbons, cements and other construction materials etc.) to the SAC and SPA through surface water drainage.
- **Pollution of the SAC/SPA** – the Operational Phase of the Proposed Development will generate surface and stormwater runoff which is to be eventually discharged to Dundalk Bay via drainage infrastructure. This presents a risk of contamination (silts, hydrocarbons etc.) to the SAC and SPA.
- **Dust deposition in the SAC/SPA** – construction activities have the potential to generate airborne dust which could adversely impact the ecology of the SAC/SPA via deposition.
- **Disturbance impacts on the SPA's waterbird assemblage** – noise and vibration from piling, rock-breaking, blasting and other intensive construction activities can result in significant disturbances to avifauna, even over a distance of several hundred metres. It is unlikely that piling will be required but rock breaking or blasting may be required to install services and the wastewater pumping station.
- **Disturbance impacts on the SPA's waterbird assemblage** – certain elements of the Proposed Development which must take place close to the SPA, such as the creation of the main site access and the potential bus stop on the R172 Blackrock Road, and the installation of the surface water drainage outfall in the north-east of the Site, may result in localised sources of disturbance.

The following mitigation and enhancement measures will ensure no significant effects arise on designated sites as a result of the Proposed Development, either alone or in-combination with other projects.

Three broad approaches are being adopted to ensure the mitigation of impacts on Dundalk Bay SAC and Dundalk Bay SPA:

- Pollution/dust Control in the Construction Phase
- Pollution Control in the Operational Phase
- Prevention of Disturbance to SPA Species in the Construction Phase.

These broad approaches to mitigation will be implemented through the following measures:

- Construction Environmental Management Plan (CEMP).
- Construction Programme.
- SUDS.
- Silt Traps & Hydrocarbon Interceptors.
- Site-Specific Environmental Management Plan (EMP).

4.5.2 Construction Phase

4.5.2.1 Mitigation 1: Construction Environmental Management Plan (CEMP)

A CEMP based on the mitigation commitments presented in the various EIAR Chapters and this NIS, will be prepared for the Construction Phase.

A planning stage CMP has been prepared for submission with the planning application (DOBA, 2023b), which entails an Environmental Management Section. This outline document provides a framework for the contractor to develop further as the project moves into the Construction Phase.

The Construction Phase CEMP will collate and set out the environmental control measures required to minimise, and control adverse environmental impacts associated with the Proposed Development. It is intended that the CEMP will be a live document, which will capture all Construction Phase environmental mitigation measures included within the EIAR, NIS and any other measures which become apparent through the EIA consultation process and/or are prescribed through planning conditions etc. The CEMP will include enabling and decommissioning works.

- All construction and operations are to be carefully planned and implemented with a series of environmental management and control procedures. The CEMP will detail the general pollution prevention principles and measures which are to be implemented, water and sediment management measures to prevent pollution during the construction phase and measures to ensure the potential for pollution fuel, oil, chemicals and other construction materials is minimised.
- **The Contractor shall engage a suitably experienced ecologist, the Project Ecologist**, who will be a full member of a relevant professional institute such as CIEEM, have relevant experience in the management of ecological constraints during construction. The Project Ecologist shall be appointed sufficiently in advance of construction to arrange for any mitigation requirements to be incorporated into the CEMP and any site-specific method statements.

- In advance of commencement of the Construction Phase, the disused existing onsite well, securely located within a pump house in the north-western portion of the Site will be fully decommissioned by an experienced borehole specialist in accordance with relevant guidelines, '*Good practice for decommissioning redundant boreholes and wells*' (UK Environment Agency, 2012). This will ensure that redundant well is made both safe and structurally stable and will be suitably backfilled or sealed to prevent groundwater pollution and flow of water between different aquifer units.
- The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guides '*Control of Water Pollution from Construction Sites*' and '*Groundwater control - design and practice*' to minimise as far as possible the risk of pollution.
- The Contractor shall take all necessary precautions **to prevent pollution or siltation of surface or groundwaters** from construction activities. The following management, control and mitigation measures will be implemented:
 - Any groundwater temporarily dewatered during the construction of the attenuation basin, wastewater pumping station and any deep building foundations in localised areas in the eastern portion of the site will be treated via the installation of a temporary *in-situ* water treatment system;
 - This system should be designed and sized to ensure that all pumped groundwater water is treated prior to discharge to a selected onsite location (via a temporary soakaway).
 - The Contractor will be required to provide a site-specific dewatering plan, clearly setting out proposed excavation methodology, estimated dewatering rates, details of the proposed treatment system, and discharge location.
 - Surface water attenuation measures are to be designed which will not be overwhelmed by one-off adverse precipitation events.
 - Where practical, cut-off V drains will be utilised to divert water entering site and reduce the amount of water to be managed on-site. Attention will be given to the maintenance and protection of all drains and temporary channels to minimise scour and the mobilisation of suspended solids (e.g. lining with hessian or clean stone, check dams, silt fencing etc.).
 - Mud will be controlled at entry and exits to the site using wheel washes and/or road sweepers, and tools and plant will be washed out and cleaned in designated areas. Wheel washings will be contained and treated prior to discharge.
 - Runoff will be directed to and intercepted by temporary settlement lagoons. The size of the settlement lagoon will be determined from predicted flow rates and retention times based on sediment particle size and density.
 - Neither groundwater nor surface water runoff from the working areas will be permitted to discharge directly to the environment. Runoff generated

within the site during construction will be filtered and treated to remove hydrocarbons and sediment. Total Suspended Solids (TSS), pH/EC and colour will be monitored daily and outlets from sedimentation ponds will incorporate a turbidity monitor with alarm at a high level.

- Subject to consent, water that is unpolluted, aside from its silt content, may be pumped out over adjacent vegetated ground, where appropriate, with consideration given to groundwater level and saturation, wildlife importance and proximity to drainage channels.
- In the event of surface water failing to meet the required standards water will be recirculated to the inlet of the sediment pond to provide further time for settlement. A penstock will be provided on the outlet from the sediment pond to control discharge from the site.
- The performance of the surface water drainage network will be maintained and monitored throughout the construction of the proposed development, noting that the proposed storm system will include permanent hydrocarbon separators.
- Where the Contractor utilises pumping to drain works areas, a back-up pump and generator must be provided on site for use in the event of the primary pump failing.
- Procedures are to be put in place to ensure the identification, remediation and correct reporting of any silt or other pollution incidents that may occur.
- During localised construction works around the northern and eastern drainage channels (to facilitate the installation of the proposed 2no. outfalls/headwalls), any minor volumes of stripped soils should be stockpiled a minimum distance of 10m from each channel and will be appropriately covered. A temporary stormwater management system will be implemented by the Contractor.
- Areas should be designated where stockpiles will be established in order to facilitate the efficient transfers of material within the site. Stockpiles will be stabilised as soon as possible (e.g. sealed, closed over, seeded or covered using geotextile mats), and bunded by earth or silt fences at the toe to intercept silt-laden runoff during rainfall events.
- Appropriate working practices to avoid the repetitive handling of excavated substrates, minimise vehicle movements, limit the size, number and frequency of stockpiles, reduce the compaction and erosion of soils etc. and control the generation of dust. The implementation of a construction traffic management plan and controls on the locations of plant and materials will minimise the compaction and erosion of soil. Excavation is to be restricted during high winds and heavy rainfall to minimise dust generation and contaminated surface runoff.
- Excavated materials are to be inspected for signs of possible contamination, such as staining or strong odours. Should any be noticed, substrates are to be segregated and samples analysed for contaminants to determine an appropriate means of disposal to licensed/permitted facilities appropriate for the waste classification.

- In order to prevent any potential surface water/groundwater impacts via release of **hydrocarbon/chemical contaminants** the following standard measures will be implemented:
 - The Contractor will ensure all site personnel are trained in the handling of materials, the sensitive nature of the receiving environment, the drainage system and the consequences of accidental spillages.
 - Fuels, lubricants and hydraulic fluids for equipment used on the construction site, as well as any solvents, oils, and paints, will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice;
 - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the proposed development for disposal or recycling;
 - Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the proposed development and properly disposed of;
 - All site vehicles used will be refuelled in bunded and adequately sealed and covered areas in the construction compound area.
 - Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the site. This will minimise the risk of groundwater becoming contaminated through site activity.
 - All oil stored on site for construction vehicles will be kept in a locked and bunded area;
 - Generators, pumps and similar plant will be placed on drip-trays to prevent contamination;
 - All site vehicles used will be refuelled in bunded areas;
 - All temporary construction fuel tanks will also be located in a suitably bunded area and all tanks will be double skinned. Relevant Material Safety Data Sheets along with oil absorbent materials will be kept on site in close proximity to any fuel storage tanks or bowzers during proposed site development works; and,
 - All fuel/oil deliveries to on-site oil storage tanks will be supervised, and records will be kept of delivery dates and volumes.
 - Fixed plant shall be self-bunded; mobile plant shall be in good working order, kept clean, fitted with drip trays where appropriate and subject to regular inspection. Drip trays will be covered, emptied regularly as required and disposed of off-site having regard for local waste management legislation.
 - Spill kits and oil absorbent material shall be carried with mobile plant and located at vulnerable locations around the site to reduce the risk of

- spillages entering the sub-surface or groundwater environment; booms shall be held on-site for works near drains or dewatering points.
- Procedures are to be put in place to ensure the identification, remediation and correct reporting of any fuel, oil, chemical or other pollution incidents that may occur.
 - **In order to prevent any potential surface water/groundwater impacts via release of cementitious materials** the following measures will be implemented:
 - No mixing of concrete will be carried out on site. The measures detailed below will be employed where poured concrete is being used in the construction process;
 - The production, transport and placement of all cementitious materials will be strictly planned and supervised. Site batching/production of concrete will not be carried out on site and therefore these aspects will not pose a risk to the waterbodies present, namely any temporarily exposed groundwater, or local drainage channels, wetlands or Dundalk Bay;
 - Shutters will be designed to prevent failure. Grout loss will be prevented from shuttered pours by ensuring that all joints between panels achieve a close fit or that they are sealed;
 - Any spillages will be cleaned up and disposed of correctly;
 - Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening;
 - Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete; and,
 - Surplus concrete will be returned to batch plant after completion of a pour.
 - The Contractor will dispose of all alkaline wastewaters and contaminated stormwater offsite having regard for local waste management legislation.
 - The Contractor will implement procurement procedures to ensure that aggregate, fill material and topsoil are acquired from reputable sources with suitable environmental management systems as well as regulatory and legal compliance.
 - The Contractor will vet the source of aggregate, fill material and topsoil imported to the site in order to ensure that it is of a reputable origin and that it is “clean” (i.e. it will not contaminate the environment).
 - All material to be disposed of off-site to a facility licensed having regard for local waste management legislation. Where material is to be stockpiled on site prior to disposal, the Contractor will control all run-off to prevent contamination of surrounding watercourses (via silt-fencing etc.).

- The CEMP will include an Emergency Response Plan (ERP) based on the Contractor's Risk Assessment, to be reviewed and approved by the Project Ecologist. The ERP will include (but not limited to):
 - Training of relevant staff, including cover staff, in the implementation of the ERP and the use of spill kits;
 - Procedures to be undertaken in the event of the release of any sediment into a watercourse, or any spillage of chemicals, fuel, oil or other hazardous materials or wastes;
 - Procedures to be undertaken in the event of any non-compliance incidents with any permit or licence, or other such risks that could lead to a pollution incident, including flood risks;
 - The number, specification and location of all spill kits which shall be carried/kept on the site;
 - Information on clean-up and reporting procedures; etc.

While it is expected that the site drainage system will be installed and commissioned early in the site construction programme, and will therefore be operational for much of the Construction Phase, there will be a period of the construction phase during which the site drainage system will not be operational. The CEMP is required to cover this period and to deal with other issues during the Construction Phase.

4.5.2.2 Mitigation 2: Construction Programme

The CEMP will include a section setting out the construction programme and will include all the environmental control measures required to avoid disturbance to SPA species, as set out below. The CEMP will also set out general measures to manage noise and vibration from construction activities that may be employed at the Site.

All rock breaking, blasting and other high-intensity construction activities as may be required within the site are to be programmed to take place outside the wintering season for SPA feature species (i.e. to take place between May and September) to ensure that disturbance to wintering species is avoided.

All discrete elements of Site construction close to the shore of Dundalk Bay (establishment of the main site access, construction of the bus stop and installation of proposed outfall and site drainage and discharge infrastructure in the north-east) are to be programmed to take place outside the wintering season for SPA feature species (i.e. to take place between May and September) to ensure that disturbance to wintering species is avoided.

4.5.2.3 Mitigation 3: Dust Control

It is not expected that significant adverse dust related impacts are likely to occur at sensitive receptors as a result of the Proposed Development. However, appropriate mitigation measures, as outlined within the CMP (DOBA, 2023b), will be employed as necessary to further prevent such impacts occurring:

- Spraying of exposed earthwork activities and site haul roads during dry weather;

- Provision of wheel washes;
- Covering of stockpiles;
- Control of vehicle speeds, speed restrictions and vehicle access;
- Sweeping of hard surface roads;
- A minimum of 1.8 metre hoarding will be provided around the site works to minimise the dispersion of dust from the working areas; and
- Any generators will be located away from sensitive receptors in so far as practicable.

4.5.3 Operational Phase

4.5.3.1 Mitigation 1: Sustainable Urban Drainage Systems (SUDS)

Storm and surface water arising from the Site will ultimately discharge to the SPA/SAC. The SUDS system has been designed to filter, collect and attenuate storm/surface water arising from the Site and discharge same at the allowable greenfield runoff rate to the outfalls alongside the R172.

As noted and screened out in the Stage 1 AA Screening (Enviroguide, 2023), there will be no significant adverse effect relating to erosion or scouring of habitats within the SAC/SPA at either of the proposed outfall points; due to there being no increase in the baseline discharge rates above the greenfield run-off rates to either of these channels. The outflow at the proposed main entrance to the Proposed Development off the R172 road will discharge to the receiving drainage channel north of the entrance at the greenfield runoff rate of 3.0 l/s. The discharge at the proposed north-eastern outfall to the SAC/SPA will be at the greenfield runoff rate of 64.5 l/s. Maximum discharges are limited to pre-development greenfield runoff rates, further reduced and diffused through the various nature-based solution measures designed upstream into the SUDS system.

4.5.3.2 Mitigation 2: Silt Traps & Hydrocarbon Interceptors

The SUDS design includes silt removal traps and Class 1 hydrocarbon separators within the drainage network. This is the primary mechanism for preventing contaminated surface water runoff entering Dundalk Bay during the Operational Phase.

The traps and separators have been designed specifically to the capacity/flow for each part of the Site's drainage network with a minimum retention time to allow immiscible hydrocarbon pollutants to accumulate on the surface and suspended solids to sink to the bottom of the unit.

The most likely sources of contamination of the surface and storm runoff are general grit and silt arising from gardens and hard surfaces, hydrocarbons from vehicle exhausts and fuels or oil spills and leaks, vehicle tyre wear, burning plastics, wastewater from washing cars, pesticides etc., used for gardening and materials used in home maintenance. While the risks to the designated sites from these forms of contamination is significant, the likely volumes are expected to be low and to remain within the design capacity of the traps and interceptors, maintained and cleaned in line with the manufacturer's recommendations.

While the risk of contamination from expected/design volumes of contamination will be removed by the traps and interceptors, functioning normally and maintained and cleaned in line with the manufacturer's recommendations, larger scale incidents such as a property fire could generate larger volumes of contaminated water which will enter the drainage system. As the traps and separators are unlikely, in such cases, to remove all the contaminants it is proposed that run-off associated with fire water run-off be temporarily stored in the detention basins and removed off site via tankers.

These procedures will ensure that in emergency situations larger volumes of contaminated water can be prevented from discharging to Dundalk Bay SPA/SAC.

4.5.3.3 Mitigation 3: Site-specific Environmental Management Plan (EMP)

The following mitigation measures, which should form part of a site-specific Environmental Management Plan (EMP) during the Operational Phase, are proposed:

- All plant and equipment utilised onsite during maintenance works should be checked and in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Site;
- Any minor volumes of fuel, oil or chemicals required during routine maintenance works will be brought to and from the site by the maintenance contractor. While temporarily onsite all chemicals will be kept in secure and bunded areas, with relevant Material Safety Data Sheets available onsite.
- Any fuel/oil tanks temporarily stored on Site will be located in a suitably bunded area and all tanks will be double skinned, with oil/chemical absorbent materials held onsite in close proximity to the tanks;
- In the unlikely event of a fuel/oil or chemical spill/leak during routine maintenance works, emergency spill response measures will be implemented with the aim of limiting the volume spilled and recovering as much of the lost product as possible;
- A detailed Site Management Plan should be put in place for the Operational Phase of the development. This plan should clearly outline standard operating procedures for each of the following:
 - Maintenance of newly installed stormwater drainage system including all newly installed gullies, silt trap and Class 1 petrol/oil separators, attenuation basin, emergency penstock valves, and outfalls. Routine inspections of all silt traps and silt trap and Class 1 petrol/oil separators will minimise the potential risk of equipment failure;
 - Maintenance of newly installed foul drainage system including the newly commissioned wastewater pumping station, rising main, pump (and back-up pump), and emergency storage tank;
 - Emergency response in the unlikely event of a major fuel/oil spill onsite;
 - Emergency response in the unlikely event of a major fire at any of the newly constructed properties;

- Action response in the unlikely event of a deterioration in stormwater quality discharging from the site; and,
 - Waste management.
- The management plan should include all health and safety and environmental management procedures associated with the above tasks and should also identify when routine equipment maintenance and checks will be carried out (as per the relevant manufacturer's requirements and industry standards).
- A nominated person (site maintenance manager) should be responsible for ensuring that all required equipment maintenance, checks and repairs are carried out as and when required and will keep an up to date maintenance record for the site. Contact details of an alternative site maintenance contact should be included within the management plan.
- The roles, responsibilities, and contact details for all site maintenance operators and emergency services should be contained within the management plan, along with reporting and notification procedures for management, regulators and stakeholders.
- The site maintenance manager will be responsible for ensuring that, in the unlikely event of either a SUDS failure (e.g. overloading of silt trap and Class 1 petrol/oil separator) or a major onsite contamination incident (e.g. fire water run-off following major property fire) all emergency penstock valves will be immediately closed, resulting in all stormwater from the Site being either diverted, or held within the onsite attenuation basin, as per the engineering design.
- All contaminated water should be disposed of to a suitably licenced offsite waste facility, in accordance with all relevant waste management legislation. This will ensure that there is no risk of any contaminated stormwater impacting Dundalk Bay SAC/ SPA. Procedures and checks would have to be put in place to ensure that the valves are returned to their normal states once the contaminated volume of stormwater is removed from the basin and storm drainage network.

4.6 Monitoring

4.6.1 Construction Phase

During the Construction Phase, the following monitoring will be carried out by the construction contractor to ensure the implemented mitigation measures are maintained effectively:

- Dust control measures (Mitigation 1) will be checked on a weekly basis, and more often during dry weather, to ensure they remain effective. The R172 and its grassy verge located east of the main Site area will be checked for any potential dust impacts, and the dust control measures reviewed if impacts are noted.
- Surface water and groundwater protection measures (As described in Section 4.5.2.1) will be checked weekly to ensure they remain effective, and more often during moderate to heavy rainfall events as appropriate.
- The results of the above monitoring be made available to Louth CoCo on request and any remedial measures that are required based on the results of same will be agreed with the same if required.

4.6.2 Operational Phase

During the Operational Phase, no additional monitoring is recommended bar the standard maintenance checks that will be carried out to ensure all SUDS measures and the wastewater pumping station are operating correctly.

5 CONCLUSION

This NIS details the findings of the Stage 2 AA conducted to further examine the potential direct and indirect impacts of the Proposed LRD on lands to the south of Bóthar Maol and to the west of Blackrock Road at Haggardstown, Dundalk, Co. Louth, on the following European Sites:

- Dundalk Bay SAC (000455).
- Dundalk Bay SPA (004026).

The above sites were identified by a screening exercise that assessed likely significant effects of a range of impacts that have the potential to arise from the Proposed Development. The AA investigated the potential direct and indirect effects of the proposed works, both during construction/infill and operation, on the integrity and qualifying interests of the above European sites, alone and in combination with other plans and projects, taking into account each site's structure, function and conservation objectives.

Where potentially significant effects were identified, a range of mitigation and avoidance measures have been suggested to avoid them. This NIS has concluded that, once the avoidance and mitigation measures are implemented as proposed, the Proposed Development will not have an adverse effect on the integrity of the above European sites, individually or in combination with other plans and projects. Where applicable, a suite of monitoring surveys have been proposed to confirm the efficacy of said measures in relation to ensuring no adverse impacts on the habitats of the relevant European sites have occurred.

As a result of the complete, precise and definitive findings in of this NIS, it has been concluded, beyond reasonable scientific doubt, that the Proposed Development will have no significant adverse effects on the QIs, SCIs and on the integrity and extent of Dundalk Bay SAC (000455) and Dundalk Bay SPA (004026). Accordingly, the Proposed Development will not adversely affect the integrity of any relevant European site.

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