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Appropriate Assessment Screening Report

PRESENTED TO

Marshall Yards Development Company Ltd. for a Proposed Large Scale Residential Development at Ballybin Road, Ratoath, Co. Meath

June 24

Environmental Consultancy Services

DOCUMENT CONTROL SHEET

Client	Marshall Yards Development Company Ltd.
Project Title	Proposed Large Scale Residential Development
Document Title	Appropriate Assessment Screening Report

Revision	Status	Author(s)	Reviewed	Approved	Issue Date
0.0	Draft for internal Review	SC *Ecologist*	SOB *Ecologist*	-	-
1.0	Draft for Client	SC *Ecologist*	SOB *Ecologist*	SOD *Principal Ecologist*	27.03.2024
2.0	S32 Issue	SC *Ecologist*	SOD *Principal Ecologist*	SOD *Principal Ecologist*	28.03.2024
3.0	Meath County Council External Review	-	-	-	May 2024
4.0	Final	SC *Ecologist*	SH *Ecologist*	BL *Principal Ecologist*	28.06.2024

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1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Marshall Yards Development Company Ltd. to prepare an Appropriate Assessment (AA) Screening Report for Proposed Large Scale Residential Development (LRD), located at Ballybin Road, Ballybin, Ratoath, Co. Meath, hereafter referred to as 'Proposed Development' or 'Site', when referring to the application Site area. This Report contains information to enable the Competent Authority to undertake Stage 1 Appropriate Assessment screening in respect of the Proposed Development.

1.2 Quality Assurance and Competence

Enviroguide Consulting is a 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. SC, Ecologist with Enviroguide, undertook the field surveys and compiled this Report.

SC is an experienced Ecologist with a B.Sc. (Hons) in Botany from the University of Galway and over two years working in Environmental Consultancy. In this time SC has surveyed habitats, plants, bats, wintering birds, breeding birds, mammals, and invasive species. SC has authored numerous ecological reports including Appropriate Assessment (AA) Screenings, Natura Impact Statements (NIS), Invasive Species Management Plans (ISMP), Ecological Impact Assessments (EcIA), Constraints Reports, and supporting submissions in Environmental Impact Assessment Report (EIAR) chapters.

BL holds a BSc. (Hons), First Class in Marine and Freshwater Biology and an MSc with Distinction in Environmental Consultancy. BL is a Full Member of the Chartered Institute of Ecology and Environmental Management and Principal Ecologist with over 10 years of experience across both private and public sector projects: encompassing residential housing developments, large scale road schemes, cycles routes, railway, renewable, mineral, and waste schemes.

BL has been responsible for a variety of tasks, including, project and team management, specialist ecological reports to support planning applications with a particular interest in ornithology, botany and Biodiversity Net Gain, budget

management, survey design, client liaison, tendering, quality assurance and specialist field surveys. Through working on a variety of projects, BL has a thorough understanding of ecological legislation, the planning system, best practice survey methodologies, biodiversity net gain and is able to provide competent and concise reports to ensure legal compliance and support planning applications.

Additionally, BL has experience in Operations Management of a team of over 140 ecologists. Tasks included monthly reviews of utilization, forward workloads, project and revenue forecasting and input into monthly and annual income statements.

1.3 Description of the Proposed Development

1.3.1 Site Location

The Site of the Proposed Development comprises agricultural lands, sheds and detached rural dwellings. The Site is generally located within Land Use Zoning consisting of A2 New Residential and A1 Existing Residential zoned land within the Meath County Development Plan 2021 - 2027. The existing site is predominantly a greenfield site with three buildings present: two detached dwellings and an agricultural shed. The Site is bound to the north and west by residential developments, to the east by agricultural lands and the Ballybin Road, and to the south by the R125.

1.4 Proposed Development Description

The Proposed Development is at a Site with a total area of 5.48 hectares principally located at Main Street/R125 and Ballybin Road, Ratoath, Co. Meath. The Site contains a proposed residential development parcel with an area of 3.66 hectares (bisected by a proposed realigned Ballybin Road) and a proposed infrastructural development with an area of 1.82 hectares (principally for road and related works, water services and open space amalgamation). The site is generally bound by: Fox Lodge Woods and Fox Lodge Manor to the west and north; existing agricultural lands and residential development to the north and east; existing Ballybin Road and Moulden Bridge to the east; and Main Street/R125 and Jamestown Road/L1016 to the south. The site also incorporates parts of: the existing Ballybin Road (north and west of Moulden Bridge), Main Street/R125, Jamestown Road/L1016 and green open space in Fox Lodge Manor.

The Proposed Development principally consists of the demolition of 2 No. dwellings (594 square metres gross floor area combined) and 1 No. agricultural shed (988.7 square metres gross floor area) and the construction of 141 No. residential dwellings with a gross floor area of 12,424.6 square metres in buildings of 2 No. and 3 No. storeys. The dwellings include 117 No. houses (57 No. 2-bed, 52 No. 3-bed, 7 No. 4-bed and 1 No. 5-bed) and 24 No. maisonette/duplex units (18 No. 1-bed and 6 No. 3-bed).

The Proposed Development also proposes a reconfiguration of the road layout at the south (Main Street/R125 and Jamestown Road/L1016) and east (Ballybin Road) of the site. Specifically, it is proposed to demolish/remove the existing 5-arm roundabout and to replace same with a new 4-arm signalised junction and reconfigured access to the

existing Ratoath Childcare site. The new junction arrangement will facilitate a proposed realignment of the southern section of the existing Ballybin Road (approximately 172 metres) as the northern arm of the new signalised junction and a revised entrance for the existing dwelling to the north-east of the site at Ballybin Road (known as 'Fox Lodge Farm', Eircode A84 KF97). The proposed road infrastructure works also include: road markings, traffic signals, traffic signage, footpaths and cycle infrastructure.

In summary the Proposed Development includes:

- 2 No. new multi-modal accesses onto the proposed realigned Ballybin Road to serve the bisected residential site;
- 2 No. pedestrian accesses onto Main Street/R125 and 1 No. pedestrian access onto the realigned Ballybin Road;
- Relocation of existing eastbound bus stop at Main Street/R125 approximately 130 metres to the west;
- Repurposing of the closed section of Ballybin Road as a pedestrian/cycle greenway;
- Internal roads and footpaths;
- 228 No. car parking spaces;
- Cycle parking spaces;
- Hard and soft landscaping, including public open space, communal amenity space and private amenity space (as rear gardens and terraces/balconies facing multiple directions);
- Demolition of the wall at the north-west corner of the site interfacing with Fox Lodge Manor and the amalgamation of existing public open in the estate and proposed public open space;
- Boundary treatments;
- Public lighting;
- Rooftop PV panels;
- 2 No. ESB sub-stations; and
- All other associated site and development works above and below ground.

It is important to note for the context of the ecology at the Site, that most planned works will occur within the area to the north of the Site which is bounded by the treelines. The southern arm of the roundabout, while being realigned, does not generally require intrusive works. The location of the Site is presented in Figure 1 below.

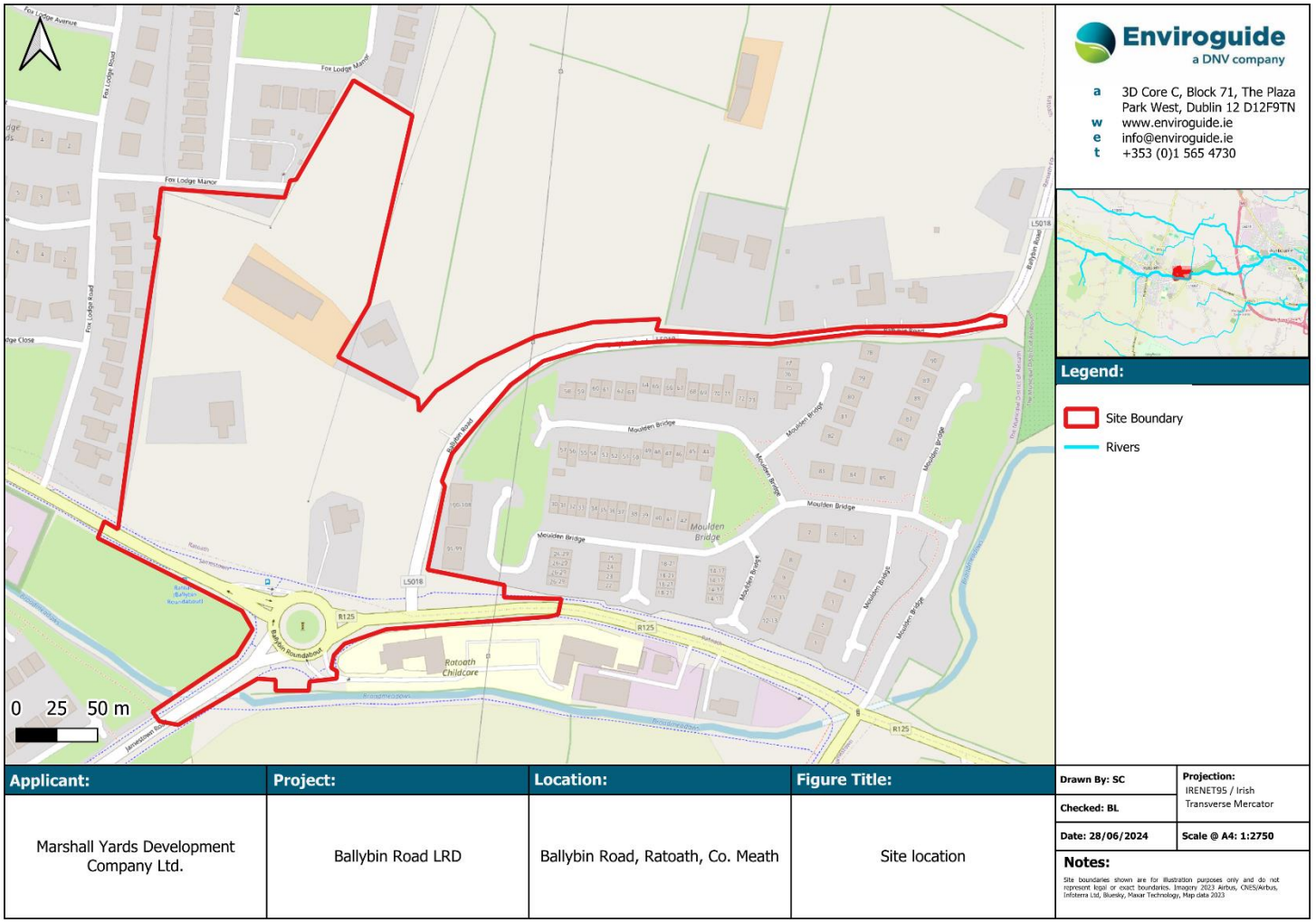

FIGURE 1. SITE LOCATION.

FIGURE 2. PROPOSED SITE LAYOUT (JOHN FLEMING ARCHITECTS, 2024).

1.4.1 Description of the Construction Phase

A Construction Management Plan (CMP) has been prepared as part of the planning application (Donnachadh O'Brien & Associates Consulting Engineers, 2024b) and considered as part of the finalisation of this EcIA.

The Construction Phase will generally comprise the following elements:

- Soil stripping and vegetation clearance.
- Installation of hardstanding areas and construction compounds.
- Groundworks, drainage, and foundation installations.
- Building construction.
- Roadworks and road realignment.

For the duration of the Construction Phase, it is envisaged that the maximum working hours shall be 08:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 13:00 Saturdays.

No works are proposed on Sundays or Bank Holidays or after the hours noted above, however, it may be necessary to work outside of these hours in exceptional circumstances such as night works or weekend works during certain construction activities.

1.4.1.1 Tree Removals Plan

A number of trees have been proposed for removal at the Site to accommodate the Proposed Development (Figure 3). Full details of the tree retention and removal plans are available in the arboricultural report (Charles McCorkell Arboricultural Consultancy 2024b).

It is noted that most of the trees scheduled for removal are in low value treelines to the north and west of the Site largely comprising non-native Monterey Cypress (*Hesperocyparis macrocarpa*), Norway Maple (*Acer platanoides*) and ash (*Fraxinus excelsior*) that are showing signs of ash dieback. Trees of higher ecological value to the south and southeast are largely being retained and are further described in the EcIA and Hedgerow Appraisal accompanying this report under separate cover (Enviroguide, 2024a, 2024b). Trees for removal in these treelines are largely low value category C and U sycamore (*Acer pseudoplatanus*) and beech (*Fagus sylvatica*). One category A oak tree (*Quercus robur*) is also scheduled for removal in this treeline to facilitate a road realignment. Mitigation has been implemented as part of the landscaping design strategy (Niall Montgomery & Partners, 2024) to ensure there is no net loss of treeline or hedgerow at the Site. Planting has also been designed strategically to ensure there are no negative effects on commuting bats throughout the Site.

"*A detailed landscape plan has been designed and will form part of the planning application for the development proposal. This design includes the planting of a large number of new high-quality trees and hedgerows. The proposed new planting will mitigate the loss of trees required to facilitate the development and will enhance the tree and hedge cover throughout the site and within the local area. This will have a positive impact on local canopy cover and the character and appearance of*

development and the surrounding landscape." (Charles McCorkell Arboricultural Consultancy, 2024b).

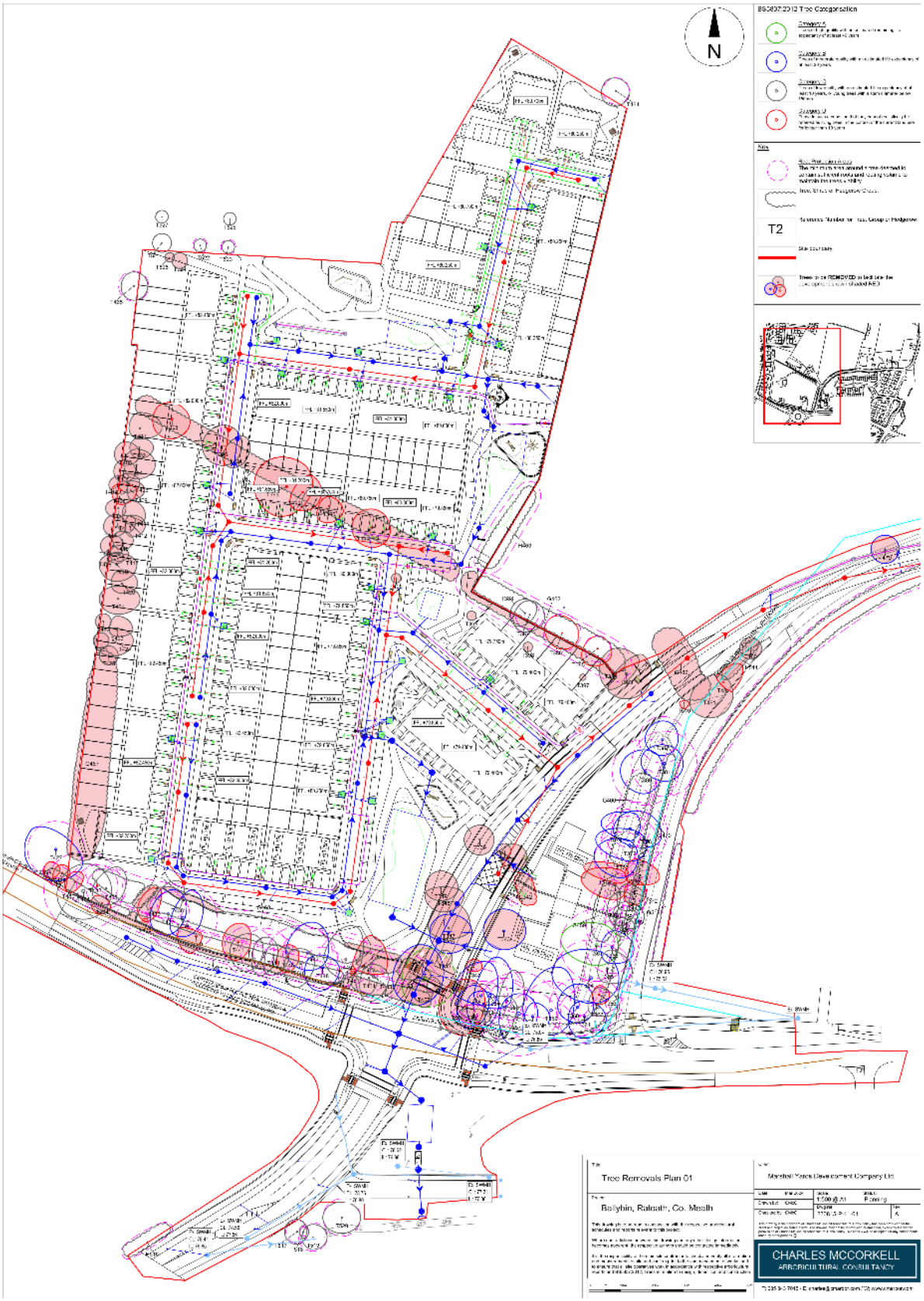

FIGURE 3. PROPOSED TREE REMOVALS PLAN (CHARLES MCCORKELL ARBORICULTURAL CONSULTANCY 2024A).

1.4.2 Description of the Operational Phase

The operational phase will comprise of urban residential housing and a realigned road that is consistent with the land use in the surrounding areas.

1.4.2.1 Surface Water

The local topography of the application Site is gently sloping from west to east towards the Ballybin Road. The primary surface water discharge currently on Site is to ground. An existing field boundary drain discharges from west to east within the Site and appears to receive some runoff from the existing agricultural lands and private dwellings prior to discharging to a piped network discharging towards the Ballybin Road.

The design and management of surface water for the Proposed Development will comply with the policies and guidelines outlined in the Meath County Development Plan (2021-2027) and the Construction Industry Research and Information Association (CIRIA) Sustainable Drainage Systems (SuDS) Manual. A 20% climate change factor will be included for the design of the surface water network in accordance with the requirements of Meath County Council.

Surface water drainage from the Proposed Development is to the south via a new 375mm dia. surface water sewer connection to the existing Ratoath Stream (also commonly referred to as the Broadmeadow Stream) (Figure 4). The discharge for the surface water drainage associated with the realigned Ballybin Road will discharge to an existing 300mm diameter pipe as per the current Ballybin Road drainage strategy. Full details of the drainage can be found in the Infrastructure Design Report (Donnachadh O'Brien & Associate Consulting Engineers, 2024a).

1.4.2.1.1 Sustainable Drainage Systems (SuDS)

A number of SuDS measures have been included in the Proposed Development with a focus on filtration techniques. These include bioretention areas, tree pits, filter drains, permeable paving, detention basin, a lined underground attenuation tank, and petrol/oil separators. For full details on SuDS measures, please see the Infrastructure Design Report (Donnachadh O'Brien and Associates, 2024a).

1.4.2.2 Foul Water

Wastewater will be collected via a main wastewater drainage network located around the Proposed Development. This will discharge by gravity to an existing 225mm diameter wastewater network located along the Ballybin Road approx. 365m east of the Site (Figure 5). Wastewater is ultimately treated at Ringsend Wastewater Treatment Plant (WwTP) and will be subsequently discharged to the River Liffey.

The estimated peak wastewater loading generated by the Proposed Development's Dry Weather Flow is estimated at 0.66 l/s while the Design Wastewater Flow of 6DWF is 3.97 l/s. For full details on foul water treatment measures can be found in the Infrastructure Design Report (Donnachadh O'Brien and Associates, 2024a).

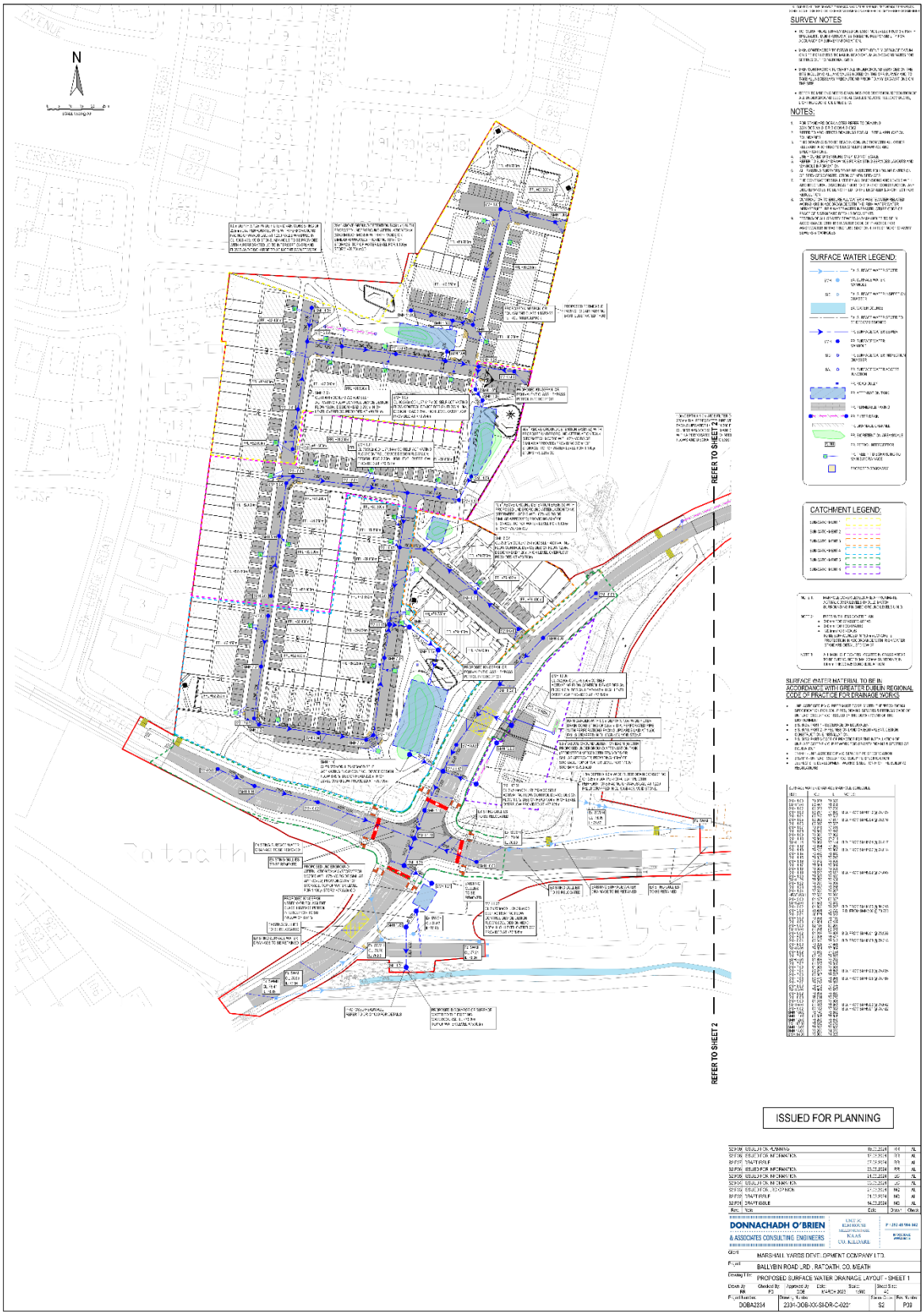

FIGURE 4. PROPOSED SURFACE WATER DRAINAGE FOR THE PROPOSED DEVELOPMENT (DONNACHADH O'BRIEN AND ASSOCIATES, 2024C).

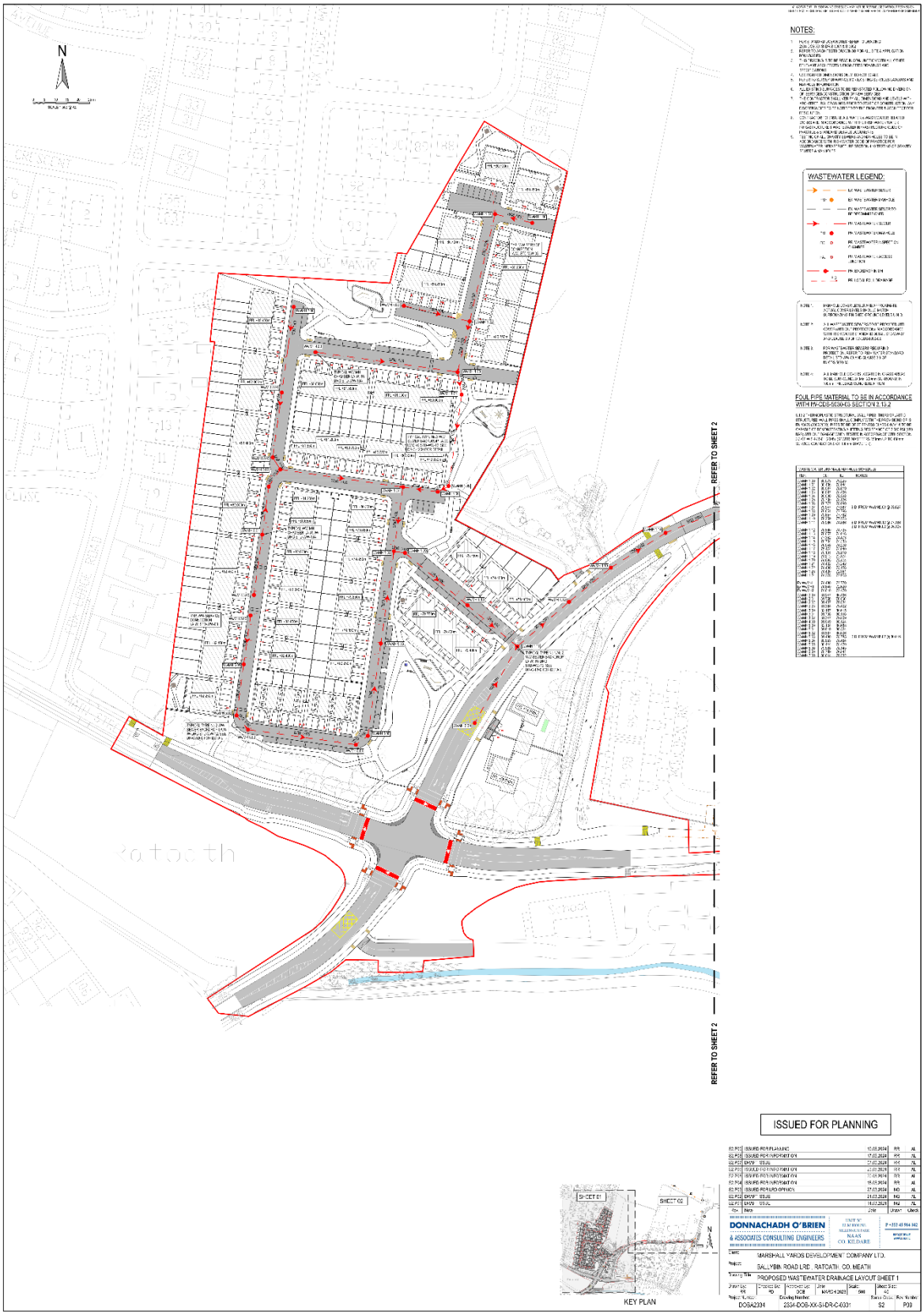

FIGURE 5. PROPOSED WASTE WATER DRAINAGE FOR THE PROPOSED DEVELOPMENT (DONNACHADH O'BRIEN AND ASSOCIATES, 2024E)).

1.4.2.3 Landscape Plan

The landscape plan (Figure 6) adapts the existing habitats on Site with a mix of open spaces and new planting throughout the Site. The landscape design statement (Niall Montgomery & Partners, 2024) describes an "Activity Spine" which will run through the centre of the Proposed Development, linking different areas of the Proposed Development.

The deciduous treeline to the south of the Site will be largely retained except for a small number of trees which will be removed due to their low value, on health and safety grounds, or to facilitate a new road. Treelines and hedgerows along the northwest and north of the Site will be removed to facilitate the Proposed Development. A hedgerow appraisal was conducted by Enviroguide ecologists on the 13th of June 2024 to determine the ecological value of these treelines and hedgerows and to ensure they are suitably replaced. Details of which can be found in the EcIA accompanying this application under separate cover (Enviroguide, 2024). The arborist, landscaping, ecology, and lighting teams have consulted to ensure no net loss of treelines or hedgerows arises at the Site and that no long-term negative impacts affect species such as bats, and to ensure replacement planting is equal to or higher quality than those being lost.

"*The masterplan has been envisaged to retain as many of the existing trees as possible of the 133 trees and 12 tree groups surveyed. 27 trees and 1 tree groups were considered to be of poor quality or -value and have been identified for removal. Of the remaining trees, 50 trees and 3 tree group have been identified for removal as a result of development. The proposed new trees are intended to enhance the landscape character & aesthetic quality of the site as well as the biodiversity credentials (net gain in biodiversity) and will be located along streets and within public- & communal spaces with the intention of mitigating existing tree loss. The new trees will vary in specification of size and species. There will be a majority of trees selected from native tree species, be of deciduous & evergreen nature and varying habit. Clusters of trees rather than formal rows will dominate the landscape expression. There will be a total of 170 new trees planted*." (Niall Montgomery & Partners, 2024 and Figure 6).

Planting throughout the Site will incorporate lawns, public open spaces, a community garden, communal seating, exercise stations, a nature play area, private gardens, and woodland habitat, and a mix of shrub and treeline planting to facilitate the movement of species throughout the Proposed Development, while also promoting a harmonious coexistence between residents and the environment.

FIGURE 6. PROPOSED LANDSCAPE PLAN (NIALL MONTGOMEREY AND PARTNERS, 2024).

1.4.2.4 Lighting Plan

No Special Areas of Conservation (SAC) of which bats are a qualifying interest (QI) are located within the zone of influence of the Proposed Development. However, the lighting and ecology teams have worked closely together to ensure lighting is ecologically friendly throughout the Site, especially in relation to bats. The lighting plan (Morley Walsh, 2024a) (Figure 7) has been designed to minimise light disturbance throughout the Site, with particular attention to the southern and western treelines which are the most frequently utilised bat corridors. The plan has been designed in accordance with Bat Conservation Ireland guidelines; Bat Conservation Ireland (Bats and Lighting: Guidance Notes for Planners, Engineers, Architects and Developers, BCI, 2010) and the Bat Conservation Trust (Guidance Note 08/18 Bats and Artificial Lighting in the UK (BCT, 2018).

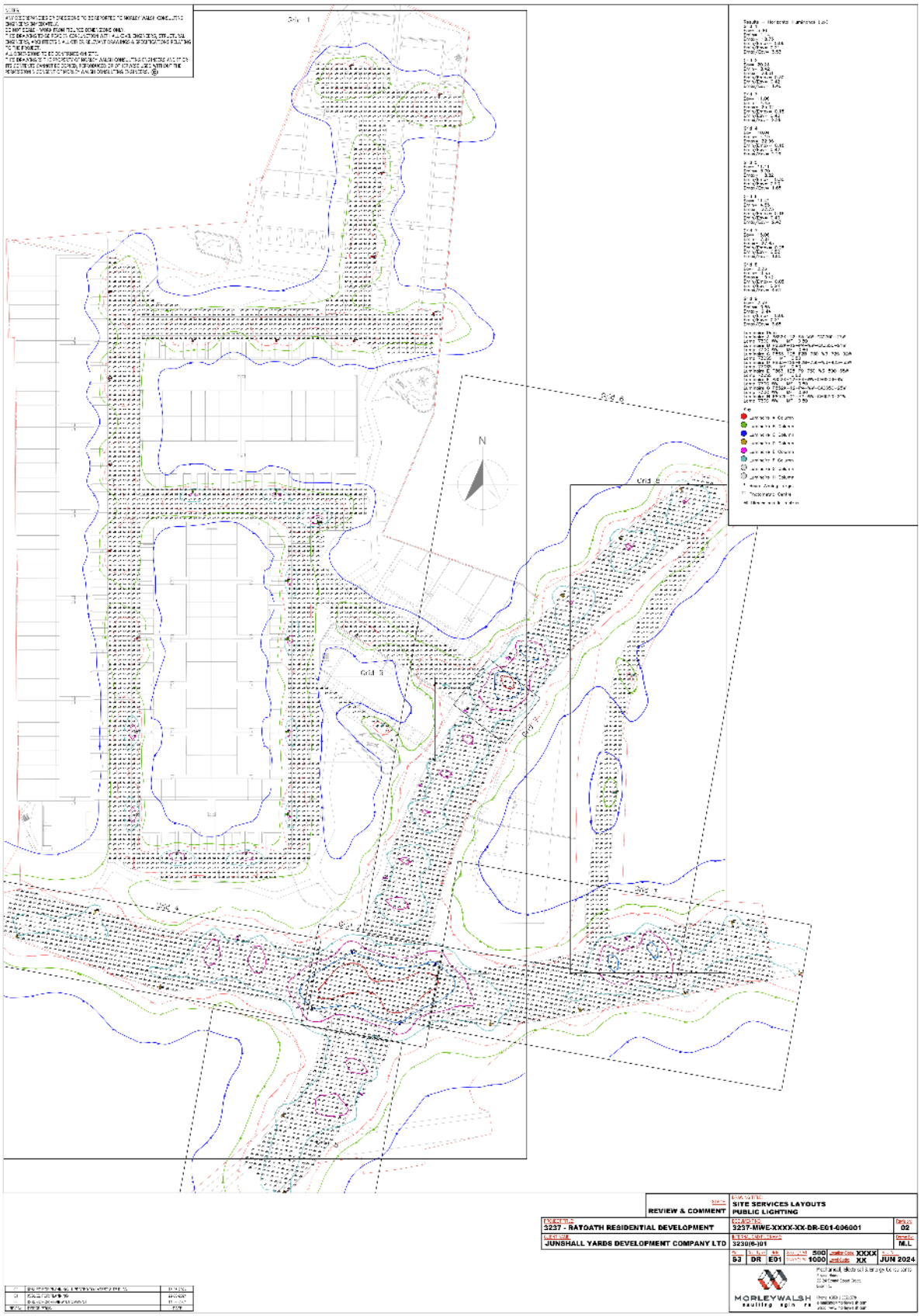

FIGURE 7. PROPOSED LIGHTING PLAN AND LUX LEVELS (MORLEY WALSH, 2024B).

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 Protection 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 the Natura 2000 Network, a network of protected sites throughout the European Community. These designated sites are referred to as "Natura 2000 sites" 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 AA is a required assessment to determine the likelihood of significant effects, based on best scientific knowledge, of any plans or projects on European sites. A screening for AA determines whether a plan or project, either 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.

This AA Screening has been undertaken to determine the potential for significant effects on relevant European sites. The purpose of this assessment is to determine, the appropriateness, or otherwise, of the Proposed Development in the context of the conservation objectives of such sites.

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 177U and Section 177V thereof. The relevant provisions of Section 177U in relation to AA screening have been set out below:

"***177U.—*** *(1) A screening for appropriate assessment of a draft Land use plan or application for consent for Proposed Development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or Proposed Development, individually or in combination with another plan or project is likely to have a significant effect on the European site.*

(2)…

(3)…

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development,

individually or in combination with other plans or projects, will have a significant effect on a European site.

(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site."

An Appropriate Assessment is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a European 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."*

According to the ruling delivered in open court in Luxembourg on 15th June 2023 regarding the interpretation of Article 6(3) of Directive 92/43, the Article must be interpreted as meaning that:

"In order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site".

As such, standardised embedded mitigation (such as the use of Sustainable Drainage Systems (SuDS) in large-scale residential developments), that are incorporated into the design of a proposal or project and which may result in a reduction of effects impacting European sites, but where the primary reason of the embedded mitigation is not to protect a European site, are permitted for consideration during the undertaking of AA.

2.2 Policy Context

2.2.1 Meath County Development Plan 2021 - 2027

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

- **HER POL 28:** "To integrate in the development management process the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate."

- **HER POL 31: "**To ensure that the ecological impact of all development proposals on habitats and species are appropriately assessed by suitably qualified professional(s) in accordance with best practice guidelines – e.g. the preparation of an Ecological Impact Assessment (EcIA), Screening Statement for Appropriate Assessment, Environmental Impact Assessment, Natura Impact Statement (NIS), species surveys etc. (as appropriate)."
- **HER POL 32:** "To permit development on or adjacent to designated Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas, Statutory Nature Reserves or those proposed to be designated over the period of the Plan, only where the development has been subject to the outcome of the Appropriate Assessment process and has been carried out to the satisfaction of the Planning Authority, in consultation with National Parks and Wildlife."
- **HER POL 33:** "To have regard to the views and guidance of the National Parks and Wildlife Service in respect of Proposed Development where there is a possibility that such development may have an impact on a designated European or National site or a site proposed for such designation."
- **HER POL 34:** "To undertake appropriate surveys and collect data to provide an evidence-base to assist the Council in meeting its obligations under Article 6 of the Habitats Directives (92/43/EEC) as transposed into Irish Law, subject to available resources."
- **HER OBJ 33:** "To ensure an Appropriate Assessment in accordance with Article 6(3) and Article 6(4) of the Habitats Directives (92/43/EEC) and in accordance with the Department of Environment, Heritage and Local Government Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009 and relevant EPA and European Commission guidance documents, is carried out in respect of any plan or project not directly connected with or necessary for the management of the site but likely to have a significant effect on a Natura 2000 site(s), either individually or in-combination with other plans or projects, in view of the site's conservation objectives.
- **HER OBJ 34:** "To protect and conserve the conservation value of candidate Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and proposed Natural Heritage Areas as identified by the Minister for the Department of Culture, Heritage and the Gaeltacht and any other sites that may be proposed for designation during the lifetime of this Plan in accordance with the provisions of the Habitats and Birds Directives and to permit development in or affecting same only in accordance with the provisions of those Directives as transposed into Irish Law."

2.2.2 County Meath Biodiversity Action Plan 2015-2020

The main function of the Meath Biodiversity Action Plan is to provide a framework and series of actions to conserve, enhance and raise awareness of Meath's rich biodiversity and to maximise the contribution that it makes to the social, economic, and environmental well-being of the county, taking into account local, national and international, including European priorities. The Meath Biodiversity Action Plan is set out to protect and improve biodiversity through objectives aimed at protecting biodiversity, and the AA Screening of the plan concluded that "*there is no potential for significant effects by the implementation of the County Meath Biodiversity Action Plan 2015-2020, either alone or in combination with other plans or projects, on any Natura 2000 site*."

2.3 Stages of Appropriate Assessment

This AA Screening Report (the "Screening Report") has been prepared by Enviroguide Consulting. It considers whether the Proposed Development is likely to have a significant effect on a European site and whether a Stage 2 AA is required.

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.

3 METHODOLOGY

3.1 Guidance

This Screening Report 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* Brussels, 28.9.2021 C (European Commission, 2021); and
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021.*

3.2 Screening Steps

Screening for AA involves the following steps:

- Establish whether the plan or project is directly connected with or necessary for the management of a European site;
- Description of the baseline existing environment at the Site of the Proposed Development;
- Identification of relevant European site(s) potentially affected;
- Identification and description of potential effects on the relevant European site(s);
- Assessment of the likely significance of the effects identified on the relevant European site(s);
- Description and characterisation of other projects or plans that in combination with the Proposed Development have the potential for having significant effects on the European site; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

It should be noted that any targeted ecological mitigation measures and/or measures intended or included for the purposes of avoiding adverse effects arising as a result of the Proposed

Development on any European site **have not been considered** as part of this Screening Report.

3.3 Desk Study

A desktop study was carried out on the 11th of March 2024 to collate and review available information, datasets, and documentation sources relevant for the completion of this Screening Report. The desktop study relied on the following sources:

- Information on the network of European Sites, boundaries, QIs and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie*;
- Text summaries of the relevant European sites taken from the respective Standard Data Forms (available at *https://natura2000.eea.europa.eu/*) and Site Synopses (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 existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from the Meath County Council online planning database (Meath.ie) and the National Planning Database (DEHLGH, 2024).

For a complete list of the documents consulted as part of this assessment, see *Section 6 References*.

3.4 Field Surveys

An initial site walkover was conducted on the 28th of September 2023. As this was toward the end of the botanical season, an additional walkover for invasive species was conducted on the 13th of June 2024. These surveys assessed the potential connectivity between the Proposed Development and any European sites to inform the preparation of this Screening Report. The survey incorporated a bird scoping survey, bat scoping surveys, habitat assessments, flora and fauna on Site, and any other likely ecological constraints. The Site was walked by an Enviroguide ecologist and any occurrences or signs of SCI / QI species, habitat suitability for SCI / QI species or presence of QI habitat was noted. Additionally, any invasive species which could potentially spread during the Construction / Operation Phase(s) and affect the integrity of a European site were also recorded where present.

For full details on the methods and results of the fields surveys listed, please refer to the EcIA Report accompanying this application under separate cover (Enviroguide, 2024). All surveys were carried out at the appropriate time of year by suitably qualified ecologists.

3.5 Identification of Relevant European Sites

The Zone of Influence (ZoI) for a project is the area over which ecological features may be affected by changes as a result of the Proposed Development and associated activities. This is likely to extend beyond the Proposed Development Site, for example where there are ecological or hydrological links beyond the site boundaries (CIEEM, 2018). Furthermore, ZoI in relation to European sites is described as follows in the 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021):

> "*The zone of influence of a Proposed Development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km).*"

Thus, to identify the European sites that potentially lie within the ZoI of the Proposed Development, a Source-Path-Receptor (SPR) method was adopted, as described in OPR PN01 (OPR, 2021). This note was published to provide guidance on screening for AA during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also readily applied in the preparation of Screening Reports such as this.

The relevant European sites were identified based on the following:

- Identification of potential sources of effects 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 Conservational Importance (SCI) bird species outside of their designated SPAs);
- Use of up-to-date GIS spatial datasets for European designated sites and water catchments – downloaded from the NPWS website (*www.npws.ie*) and the EPA website (*www.epa.ie*) to identify European sites which could potentially be affected by the Proposed Development; and
- Identification of potential pathways between the Site of the Proposed Development and any European sites within the ZoI of any of the identified sources of effects.
    - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any European sites.
    - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any European sites.
    - Air and land connectivity assessed based on Proposed Development details and proximity to European sites.
    - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.
- Defining the likely ZoI based on the identified sources of effects and potential pathways between the Proposed Development and any European sites.

3.6 Assessment of Significant Effects

The conservation objectives of the European sites identified to lie within the ZoI were reviewed and assessed in order to establish whether the construction and operation of the Proposed Development has the potential to have a negative impact on any of the qualifying interests, and/or conservation objectives listed for the European site.

The assessment framework is taken from the best practice guidelines issued by the European Commission, i.e., "*Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*".

The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators:

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.
- Changes in population density.
- Changes in water quality and resource.

In addition, information pertaining to the conservation objectives of the European sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

3.7 Consultation

Enviroguide consulted with stakeholders throughout the AA screening process in order to obtain the relevant information to carry out this screening. Regular consultation was conducted with the applicant and the wider design team to obtain information on engineering, drainage, site layout, SuDS measures, landscaping, and lighting. Consultation was also carried out with the competent authority (Meath County Council) on the 29th of April 2024 during the S32 LRD meeting. Information from all consultations have been taken on board and applied to the AA screening where relevant and necessary.

3.8 Limitations

Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:

- An extensive search of available datasets for records of rare and protected species within proximity of the Proposed Development has been undertaken as part of this assessment. However, the records from these datasets do not constitute a complete species list. The absence of species from these datasets does not necessarily confirm an absence of species in the area.
- It was not possible to survey the Ratoath Stream (also commonly referred to as the Broadmeadow Stream) 150m in each direction for otter due to restricted access. However, the portion that traverses the Site and for several meters each way was

observable and surveyed. No sign of otter was recorded within the immediate vicinity of the Site. The precautionary principle has been applied and it is assumed otter use the river. However, as the Ratoath Stream does not form an SAC of which otter is a qualifying interest, this is not a limitation that would prevent robust conclusions being drawn as to the nature of otter at any connected European Site, and hence, does not affect the AA screening outcome.

4 STAGE 1 SCREENING

4.1 Existing Environment

4.1.1 Desk Study Results

4.1.1.1 Hydrology

The Site has been mapped by the EPA (EPA, 2024) to be within the Nanny-Delvin Catchment (Catchment I.D.: 08) and the Broadmeadow_SC_010 Sub-Catchment, (Sub-catchment ID: 08_3).

The closest surface water feature to the Site recorded on the EPA database (EPA, 2024) is the Ratoath Stream (EU Code: IE_EA_08B020400). The Ratoath Stream is known locally and commonly referred to as the Broadmeadow stream but for the purposes of this report, the EPA designated name will be used. The Ratoath Stream is located directly south of the Proposed Development and intersects the redline boundary for approximately 30m on the southern boundary.

The Ratoath Stream flows east before merging with several smaller tributaries to become the Broadmeadow Stream (EPA Code: 08B02) which discharges to Malahide Estuary in Co. Dublin. There is a distance of approximately 16.6 km in a direct line, or approximately 19.1 km of riparian corridor between the Site and this estuary.

4.1.1.2 Geology and Hydrogeology

The Soil Information System (SIS) national soil at the Site is "*Straffan"*. The Site sits on subsoils of primarily "Limestone till (Carboniferous)*"* with a small area of "*Alluvium undifferentiated*" to the south of the Site (GSI, 2024).

The Site of the Proposed Development is situated on the Swords groundwater body (EU Code: IE_EA_G_011), which is classified as '*Not at Risk'* of not meeting its WFD objectives (EPA, 2024). The Site sits on an area of "*Poorly productive bedrock*" (EPA, 2024). The bedrock units underlying the Site are classified as "*Dinantian Upper Impure Limestones"* (GSI, 2024).

The Site lies within the Swords groundwater body which likely discharges east towards the Irish Sea. The level of groundwater vulnerability from human activity within this groundwater body ranges from 'Low' in the north of the Proposed Development, gradually getting to 'Extreme' toward the south of the redline boundary where works will overlap with the Ratoath Stream.

4.1.2 Field Survey Results

One drain was recorded bisecting the Site in a northwest to southeast direction. It is an open drain with low water levels and dense vegetation growth. The outflow of this drain could not be identified due to overgrowth but is expected to connect to the public surface water network on the Ballybin road.

4.1.2.1 Habitats & Flora

Habitats are fully assessed in the EcIA under separate cover (Enviroguide, 2024). A summary of habitats present at the Site are detailed in Table 1:

TABLE 1. HABITATS PRESENT ON SITE.

Habitat	Location and extent
GA1 - Improved agricultural grassland	Largest habitat present, comprising the majority of the Site.
BL1 – Stone walls and other stone work	A concrete block wall that borders the northwest of the Site.
BL2 - Earth banks	A small earth bank is present at the southern boundary.
BL3 - Buildings and artificial surfaces	Two residential buildings and a shed in the rough centre of the Site, footpaths, and driveways.
ED2 - Spoil and bare ground	A small area around the entrance to the agricultural shed.
GA2 - Amenity grassland (improved)	A small patch of grassland south of the roundabout.
GS2 - Dry meadows and grassy verges	Border habitats present mainly along roadways and around buildings.
WD1 - (Mixed) broadleaved woodland	A mixed deciduous woodland with mostly mature trees. Approximately two to three rows deep, running along the south and southwest border.
WL1 - Hedgerows	Short hedgerows were present on perimeter edges.
WL2 - Treelines	Treelines comprise the border habitats of the above-mentioned woodland features, as well as one treeline that bisects the Site adjacent to the drain.
FW2 - Depositing/lowland rivers	The Ratoath Stream borders the south of the Site and intersects the redline boundary for approximately 30m via culvert.
FW4 - Drainage ditches	A drainage ditch bisects the site from northwest to southeast.

No instances of Third Schedule invasive plant species, or any rare or protected plants were recorded at the Site.

Five invasive plant species was recorded on or in close proximity to the Site during the Site walkover on the 28th of September 2023 and the hedgerow appraisal on the 13th of June 2024 (Figure 8). These were beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*), cotoneaster sp., butterfly bush (*Buddleia davidii*), and cherry laurel (*Prunus laurocerasus)*.

Sycamore and beech are on the Amber List of invasive plant species and are considered 'Medium' impact species (Invasive Species Ireland, 2013). These are predominant species in the WD1 Mixed broadleaf woodland habitat. While they are considered invasive species, their invasiveness is contextual and is generally only a problem in woodlands where they can out compete native species. In the context of this Site where the surrounding lands are urban and hardscaped or regularly maintained grassland, these species are not considered to have a negative impact. Furthermore, where large mature trees are present as is the case on Site, they tend to have positive ecological functions such as providing nesting and roosting habitat to birds and bats and so have an overall positive effect on the local ecology.

Cotoneaster was identified in hedgerows on Site. The species level could not be identified with certainty, but it was ruled out as being wall cotoneaster. Therefore, it is a low impact species.

Butterfly bush was identified in a hedgerow to the west of the Site and is classed as a medium impact species.

Cherry laurel was identified along a hedgerow bordering the south of the Site. This hedge is planted on neighbouring lands that border the Site and is not within the Site boundary. Furthermore, no intrusive works are scheduled in this area of the Site that would require any disturbance to the neighbouring hedge.

FIGURE 8. INVASIVE PLANT SPECIES AT OR NEAR THE SITE.

4.1.2.2 Fauna

Faunal activity on Site during the Preliminary Ecological Assessment (PEA) was generally low. Please refer to the EcIA (Enviroguide, 2024) that accompanies this application under separate cover for full details of methodologies and results relating to flora and fauna that are not of relevance to this AA screening.

No red listed bird species (Gilbert, Stanbury & Lewis, 2021) were observed or heard during the initial Site walkover, nor was any evidence of their use of the Site recorded. Three amber listed species were recorded, namely goldcrest (*Regulus regulus*), greenfinch (*Carduelis chloris*) and starling (*Sturnus vulgaris*). The remainder were green listed.

The Site does not provide enough suitable habitat for QI species such as breeding and wintering birds of any European site within the ZoI to warrant further surveys.

Non-volant mammal activity was recorded during surveys as described in the EcIA (Enviroguide, 2024). No bat roosts were recorded on Site. One mammal trail was found along the southern boundary and along the west of the Site although no evidence as to what species such as prints or droppings were found, and it is thought to most likely have been formed by the landowner's dogs. No evidence of protected species such as badger (*Meles meles*) was observed and no evidence of protected mammals were present in the form of prints, fur, droppings, burrows or otherwise.

The Ratoath Stream is culverted to the south of the Site. No evidence of otter holts or couches were recorded, or suitable amphibian habitat. The precautionary principle is applied and so it is therefore assumed these species occupy territories downstream of the Proposed Development. The Site is not hydrologically linked to any protected salmonid rivers.

4.2 Identification of Relevant European Sites

4.2.1 Potential Sources of Effects

The Proposed Development is not directly connected with or necessary to the management of European sites. However, 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:* ***18-24 months***)

- Uncontrolled releases of dust, sediments and/or other pollutants to air due to earthworks.
- Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies or surface water network.
- 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 arising from construction activity.
- Increased dust and air emissions arising from construction traffic.
- Increased lighting in the vicinity arising from construction activity.
- Increased human presence and activity arising from construction activity.

Operational Phase *(Estimated duration: Indefinite)*

- Hydraulic/organic overloading of Ringsend WwTP leading to the release of untreated sewage into the River Liffey and associated downstream European sites.
- Surface water drainage from the Site of the Proposed Development.
- Increased local flooding caused by overloading the drainage system.
- Increased lighting at the Site and in the vicinity emitted from the Proposed Development.
- Increased human presence and activity at the Site and in the vicinity as a result of the Proposed Development.
- Loss of *ex-situ* habitat for SCI species of European sites.

4.2.2 Potential Pathways to European Sites

For the above listed potential sources of effects to have the potential to cause likely significant effects on any European site, a pathway between the source of potential effects (i.e., the Site of the Proposed Development) and the receptor is required. Potential impact pathways are discussed in the following sections in the context of the identified impact sources as identified in section 4.2.1.

4.2.2.1 Direct Pathways

4.2.2.1.1 Hydrological pathways

The Site is located north of the Ratoath Stream and is subsequently hydrologically linked to Malahide Estuary and its associated European sites. These are **Malahide Estuary SAC (000205)** and **Malahide Estuary SPA (004025),** and subsequently, the North-West Irish Sea SPA (004236).

A hydrological pathway exists via surface water run-off and groundwater discharge between the Site and the Ratoath Stream which is hydrologically connected to the aforementioned European sites.

4.2.2.1.2 Hydrogeological Pathways

During groundworks and other construction activities, the ground will be exposed and any potential accidental discharges to ground could potentially migrate vertically downward to the underlying bedrock aquifer and laterally within the aquifer to downgradient European sites. European sites within the same groundwater body are Malahide Estuary SAC (000205), Malahide Estuary SPA (004025), Rogerstown Estuary SAC (000208) and Rogerstown Estuary SPA (004015).

The Site lies within the Swords groundwater body (Figure 10) which discharges east towards the Irish Sea. The level of groundwater vulnerability from human activity within this groundwater body ranges from '*Low'* in the north of the Proposed Development to '*Extreme'* toward the south of the redline boundary where works will overlap with the Ratoath Stream (EPA, 2024).

Groundwater tends to flow in a general direction toward a waterbody such as a river, lake, or sea. Water within a groundwater body is regularly intercepted by another waterbody before it can migrate entirely through the aquifer to its final output destination such as a sea. Any potential pollutants that manage to discharge to groundwater at the Site would then likely be

intercepted by the Ratoath Stream and its many tributaries, adding further dilution and deposition of any potential pollutants. Therefore, groundwater contaminants are unlikely to ever reach Rogerstown Estuary SAC (000208) and Rogerstown Estuary SPA (004015). Groundwater that discharges to the Ratoath Stream does have the potential to reach the European sites **Malahide Estuary SAC (000205)** and **Malahide Estuary SPA (004025).**

No other European sites are linked to the Site via hydrogeological means.

4.2.2.1.3 Air and land pathways

The construction phase of the Proposed Development could introduce dust and noise impacts transferable via air and land pathways, as well as increased lighting and human activity at the Site and in the vicinity of the Site during the construction and operational phases. The IAQM (2016) state that "*95% of dust particles from mineral workings have a relatively high mass and generally deposit within 100m of the point of release, with the remainder being deposited within 200 – 500 m of source*" (IAQM, 2016). The volume of dust cannot be accurately measured in an AA screening and will require monitoring at the Site, however, the Site is over 16km from the nearest European site in a direct line and so there is no possibility for any significant air or land borne pollutants such as dust, light, or noise to travel directly between the Proposed Development and any European sites. This pathway can be **screened out**.

4.2.2.2 Indirect Pathways

4.2.2.2.1 Hydrological pathways

A direct hydrological connection was described in section 4.2.2.1.1 above. A second, indirect hydrological connection exists between the Proposed Development and European sites in Dublin Bay as a result of the foul water treatment at Ringsend WwTP. These sites are **South Dublin Bay SAC (000210), North Dublin Bay SAC (000206), South Dublin Bay and River Tolka Estuary SPA (004024)** and **North Bull Island SPA (004006).**

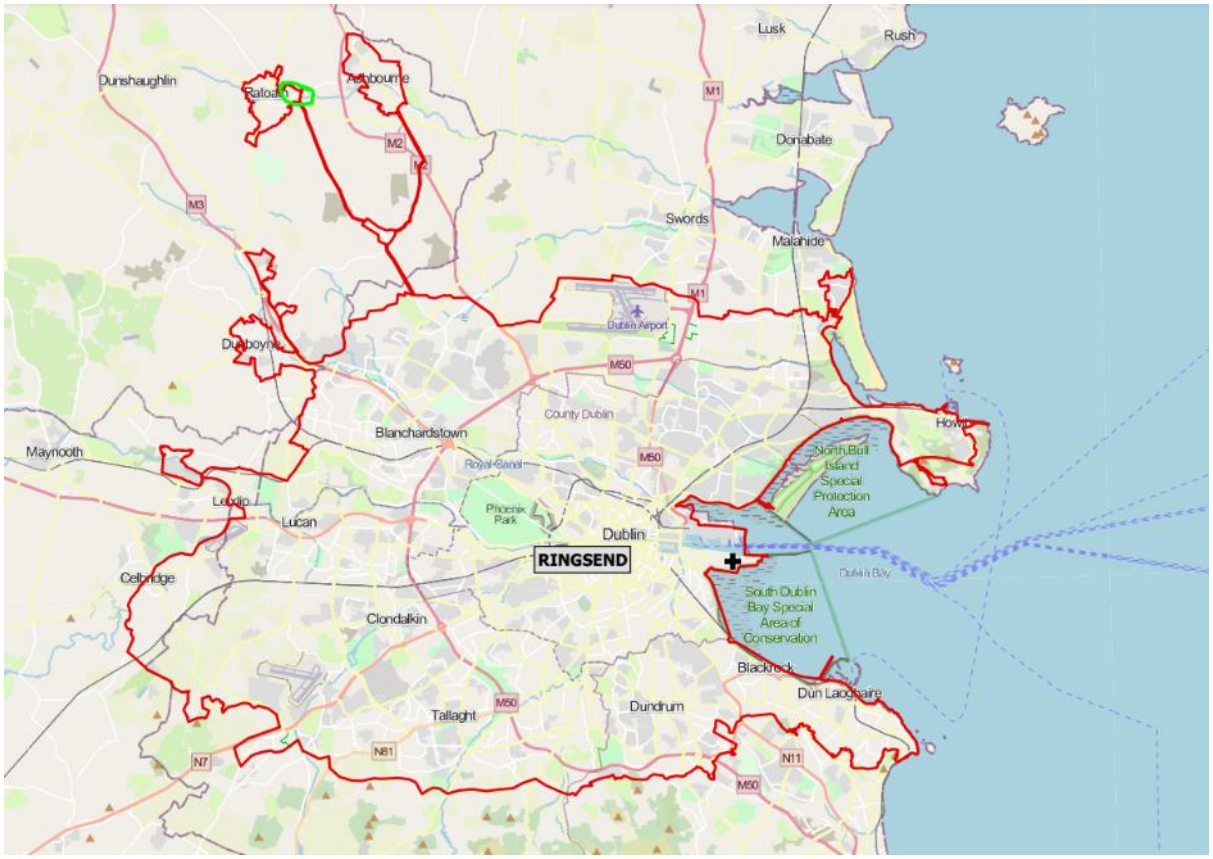

FIGURE 9. SITELOCATION RELATIVE TO RINGSEND WWTP AGGLOMERATION BOUNDARY (SITE LOCATION CIRCLED IN GREEN). (ADAPTED FROM CLARKE, 2023).

4.2.2.2.2 Air and Land Pathways

The Site is located adjacent to the Ratoath Stream and so airborne dust could settle in the stream and travel downstream to **Malahide Estuary SAC (000205)** and **Malahide Estuary SPA (004025)** and subsequent downstream European sites. An indirect air and land pathway therefore exists.

However, considering most of the works are to be confined to the northern half of the Site which is buffered from the stream by grassy vegetation and a mature treeline, it is unlikely that any significant dust particles will reach the Ratoath Stream. Works occurring south of the treeline have the potential to deposit some dust into the Ratoath stream. For an accurate representation of the volume of dust particles entering the Ratoath Stream, construction monitoring would be required. However, estimates from the IAQM (2016) state that "*95% of dust particles from mineral workings have a relatively high mass and generally deposit within 100m of the point of release, with the remainder being deposited within 200 – 500 m of source*". Therefore, even in a worst-case scenario, and for reasons outlined in section 4.3.1, it is highly unlikely that any volume of dust entering the Ratoath Stream would cause a significant impact on downstream European sites. Therefore, this pathway can be **screened out**.

4.2.2.2.3 Other Indirect pathways

The Site does not offer significant *ex-situ* habitat for the bird species of Special Conservation Interest (SCI) associated with the Malahide Estuary SPA (004025) or other linked European sites, including the North-West Irish Sea SPA (004236) due to the relatively small size of the

Site, the distance inland, lack of suitable habitat on Site, and considerable amount of similar habitat between the Site and the nearest SPA.

No other indirect pathways (e.g., recreational pressures on European sites, disruptions to migratory paths) were identified. There are >16 km between the nearest European site and the Proposed Development. Between these sites there are an abundance of similar sites for migratory birds, and similarly, alternative recreational areas. The likelihood of all persons (approx. 381) from the newly Proposed Development attending a European site at once over 16km away is extremely unlikely. Even still, the nearest European site is a large estuary with an abundance of space to walk around, and due to the wet and dangerous nature of estuaries, is highly unlikely anybody will disturb the protected habitats or interfere with them. Therefore, the likelihood of recreational pressures occurring at any European site as a result of the Proposed Development is unlikely and this indirect pathway is deemed insignificant.

4.2.3 Relevant European Sites

A European site will only be at risk from likely significant effects where a SPR link exists between the Proposed Development Site and the European site. Two European sites were found to have an SPR link of note: **Malahide Estuary SAC (000205)** and **Malahide Estuary SPA (004025).**

TABLE 2. EUROPEAN SITES CONSIDERED WITH THE SOURCE-PATHWAY-RECEPTOR (SPR) METHOD TO ESTABLISH NOTABLE LINKS BETWEEN THE SOURCES OF EFFECTS ARISING FROM THE PROPOSED DEVELOPMENT, AND ANY RELEVANT EUROPEAN SITES. THOSE SITES WITH NOTABLE SPR LINKS ARE HIGHLIGHTED IN GREEN (IF ANY).

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
Special Areas of Conservation (SAC)			
Malahide Estuary SAC (000205) https://www.npws.ie/protected-sites/sac/000205	**Conservation Objectives Version 1.0 (NPWS, 2013a)** **Habitats** - Mudflats and sandflats not covered by seawater at low tide [*1140*] - Salicornia and other annuals colonizing mud and sand [*1310*] - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [*1330*] - Mediterranean salt meadows (*Juncetalia maritimi*) [*1410*] - Shifting dunes along the shoreline with *Ammophila*	**16.1 km east**	Hydrological and hydrogeological pathway via surface water and groundwater discharge to the Ratoath Stream. Potential indirect air and land pathway via dust entering Ratoath Stream.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	arenaria (white dunes) [*2120*] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [*2130*]		
Rogerstown Estuary SAC (000208) *https://www.npws.ie/protected-sites/sac/000208*	- Estuaries [1130] - Mudflats and sandflats not covered by seawater at low tide [1140] - Salicornia and other annuals colonising mud and sand [1310] - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] - Mediterranean salt meadows (*Juncetalia maritimi*) [1410] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	**18.3 km east**	Weak hydrogeological connection between the Proposed Development and this European site. Due to distance, dilution factors and interception by Ratoath Stream, this connection is deemed weak and **insignificant**.
South Dublin Bay SAC (000210) *https://www.npws.ie/protected-sites/sac/000210*	**Conservation Objectives Version 1.0 (NPWS, 2013b)** **Habitats** - Mudflats and sandflats not covered by seawater at low tide [1140] - Annual vegetation of drift lines [1210] - Salicornia and other annuals colonising mud and sand [1310]	**24.5 km southeast**	An indirect hydrological connection exists via foul waters from the Site which will be treated at Ringsend WwTP. Ringsend WwTP has the capacity to adequately treat the additional foul waters from the Proposed Development before discharging into Dublin Bay and this pathway is therefore deemed weak and **insignificant**.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	- Embryonic shifting dunes [2110]		
North Dublin Bay SAC (000206) https://www.npws.ie/protected-sites/sac/000206	**Conservation Objectives Version 1.0 (NPWS, 2013c)** - Mudflats and sandflats not covered by seawater at low tide [1140] - Annual vegetation of drift lines [1210] - Salicornia and other annuals colonising mud and sand [1310] - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] - Mediterranean salt meadows (Juncetalia maritimi) [1410] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] - Humid dune slacks [2190] - *Petalophyllum ralfsii* (Petalwort) [1395]	**24 km southeast**	An indirect hydrological connection exists via foul waters from the Site which will be treated at Ringsend WwTP. Ringsend WwTP has the capacity to adequately treat the additional foul waters from the Proposed Development before discharging into Dublin Bay and this pathway is therefore deemed weak and **insignificant**.
Special Protection Areas (SPAs)			
Malahide Estuary SPA (004025) *https://www.npws.ie/protected-sites/spa/004025*	**Conservation Objectives Version 1.0 (NPWS, 2013b)** **Habitats** - Wetland and Waterbirds [A999] **Species**	**16.1 km east**	Hydrological and hydrogeological pathway via surface water and groundwater discharge to the Ratoath Stream. Potential indirect air and land pathway via dust entering Ratoath Stream.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	- Great Crested Grebe (*Podiceps cristatus*) [A005] - Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - Shelduck (*Tadorna tadorna*) [A048] - Pintail (*Anas acuta*) [A054] - Goldeneye (*Bucephala clangula*) [A067] - Red-breasted Merganser (*Mergus serrator*) [A069] - Oystercatcher (*Haematopus ostralegus*) [A130] - Golden Plover (*Pluvialis apricaria*) [A140] - Grey Plover (*Pluvialis squatarola*) [A141] - Knot (*Calidris canutus*) [A143] - Dunlin (*Calidris alpina*) [A149] - Black-tailed Godwit (*Limosa limosa*) [A156] - Bar-tailed Godwit (*Limosa lapponica*) [A157] - Redshank (*Tringa totanus*) [A162]		
Rogerstown Estuary SAC (004015) *https://www.npws.ie/protected-sites/spa/004015*	- Estuaries [1130] - Mudflats and sandflats not covered by seawater at low tide [1140] - Salicornia and other annuals colonising mud and sand [1310] - Atlantic salt meadows (*Glauco-*	**18.3 km east**	Weak hydrogeological connection between the Proposed Development and this European site. Due to distance, dilution factors and interception by Ratoath Stream, this connection is deemed weak and **insignificant**.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	Puccinellietalia maritimae) [1330] - Mediterranean salt meadows (*Juncetalia maritimi*) [1410] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]		
North-West Irish Sea SPA (004236) https://www.npws.ie/protected-sites/spa/004236	**Conservation Objectives Version 1.0 (NPWS, 2023)** **Habitats** - Red-throated Diver (*Gavia stellata*) [A001] - Great Northern Diver (*Gavia immer*) [A003] - Fulmar (*Fulmarus glacialis*) [A009] - Manx Shearwater (*Puffinus puffinus*) [A013] - Cormorant (*Phalacrocorax carbo*) [A017] - Shag (*Phalacrocorax aristotelis*) [A018] - Common Scoter (*Melanitta nigra*) [A065] - Little Gull (*Larus minutus*) [A177] - Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - Common Gull (*Larus canus*) [A182] - Lesser Black-backed Gull (*Larus fuscus*) [A183]	**22.2 km east**	Hydrological pathway via surface water discharge to the Ratoath Stream. The distance between the sites, dilution factor, and likely settlement and deposition of pollutants before ever reaching this SPA makes the pathway weak and **insignificant.**

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	- Herring Gull (*Larus argentatus*) [A184] - Great Black-backed Gull (*Larus marinus*) [A187] - Kittiwake (*Rissa tridactyla*) [A188] - Roseate Tern (*Sterna dougallii*) [A192] - Common Tern (*Sterna hirundo*) [A193] - Arctic Tern (*Sterna paradisaea*) [A194] - Little Tern (*Sterna albifrons*) [A195] - Guillemot (*Uria aalge*) [A199] - Razorbill (*Alca torda*) [A200] - Puffin (*Fratercula arctica*) [A204]		
South Dublin Bay and River Tolka Estuary SPA (004024) https://www.npws.ie/protected-sites/spa/004024	**Conservation Objectives Version 1.0 (NPWS, 2013d)** **Habitats** - Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - Oystercatcher (*Haematopus ostralegus*) [A130] - Ringed Plover (*Charadrius hiaticula*) [A137] - Grey Plover (*Pluvialis squatarola*) [A141] - Knot (*Calidris canutus*) [A143] - Sanderling (*Calidris alba*) [A144] - Dunlin (*Calidris alpina*) [A149] - Bar-tailed Godwit (*Limosa lapponica*) [A157]	**24.5 km southeast**	An indirect hydrological connection exists via foul waters from the Site which will be treated at Ringsend WwTP. Ringsend WwTP has the capacity to adequately treat the additional foul waters from the Proposed Development before discharging into Dublin Bay and this pathway is therefore deemed weak and **insignificant**.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	- Redshank (*Tringa totanus*) [A162] - Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - Roseate Tern (*Sterna dougallii*) [A192] - Common Tern (*Sterna hirundo*) [A193] - Arctic Tern (*Sterna paradisaea*) [A194] - Wetland and Waterbirds [A999]		
North Bull Island SPA (004006) https://www.npws.ie/protected-sites/spa/004006	**Conservation Objectives Version 1.0 (NPWS, 2015)** - Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - Shelduck (*Tadorna tadorna*) [A048] - Teal (*Anas crecca*) [A052] - Pintail (*Anas acuta*) [A054] - Shoveler (*Anas clypeata*) [A056] - Oystercatcher (*Haematopus ostralegus*) [A130] - Golden Plover (*Pluvialis apricaria*) [A140] - Grey Plover (*Pluvialis squatarola*) [A141] - Knot (*Calidris canutus*) [A143] - Sanderling (*Calidris alba*) [A144] - Dunlin (*Calidris alpina*) [A149] - Black-tailed Godwit (*Limosa limosa*) [A156]	**24 km southeast**	An indirect hydrological connection exists via foul waters from the Site which will be treated at Ringsend WwTP. Ringsend WwTP has the capacity to adequately treat the additional foul waters from the Proposed Development before discharging into Dublin Bay and this pathway is therefore deemed weak and **insignificant**.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Direct Distance to Site	Potential Pathways
	- Bar-tailed Godwit (*Limosa lapponica*) [A157] - Curlew (*Numenius arquata*) [A160] - Redshank (Tringa totanus) [A162] - Turnstone (*Arenaria interpres*) [A169] - Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - Wetland and Waterbirds [A999]		

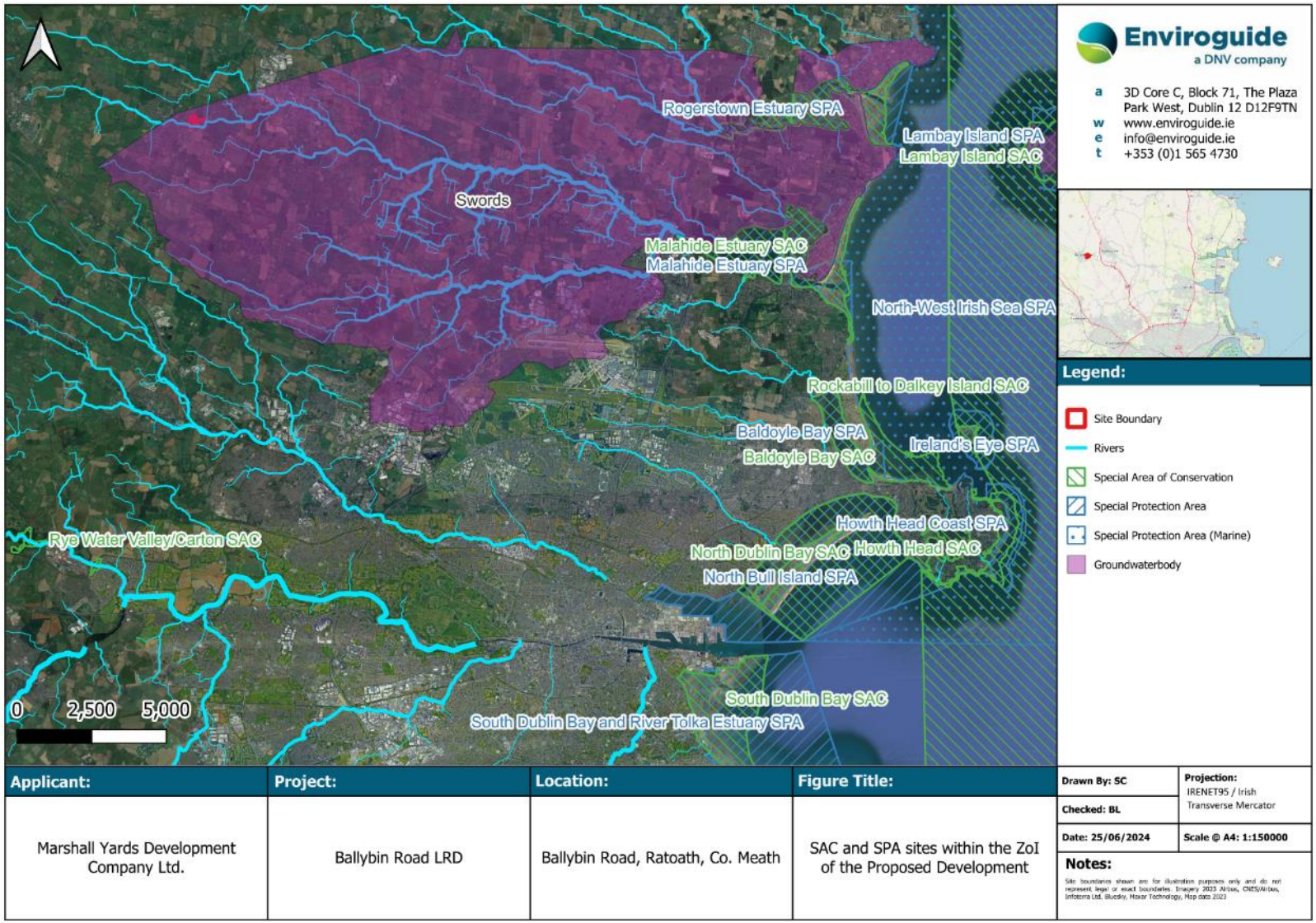

FIGURE 10. LOCATION OF ALL EUROPEAN SITES WITH POTENTIAL SPR LINKS TO THE PROPOSED DEVELOPMENT.

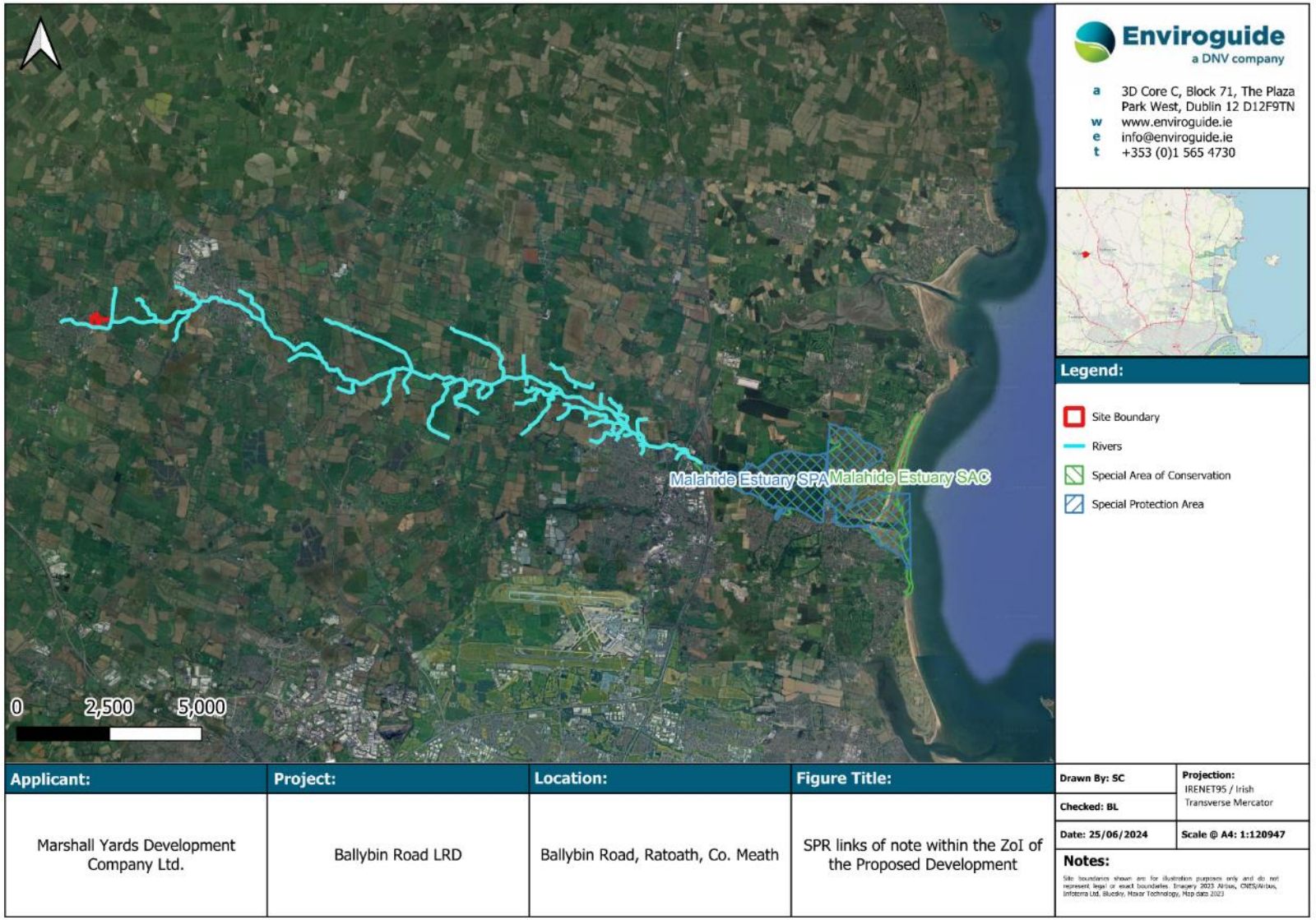

FIGURE 11. SPR LINKS OF NOTE BETWEEN EUROPEAN SITES AND THE PROPOSED DEVELOPMENT.

4.2.3.1 Malahide Estuary SAC (000205)

The following description of the **Malahide Estuary SAC (000205)** is extracted from the Site Synopsis (NPWS, 2017) for the site:

"The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as 'the island'. The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (Dwarf Eelgrass, Zostera noltii, and Narrow-leaved Eelgrass, Z. angustifolia) in the north section of the outer estuary, along with Beaked Tasselweed (Ruppia maritima) and extensive mats of green algae (Enteromorpha spp., Ulva lactuca). Common Cord-grass (Spartina anglica) is also widespread in this sheltered part of the estuary.

The dune spit has a well developed outer dune ridge dominated by Marram Grass (Ammophila arenaria). The dry areas of the stabilised dunes have a dense covering of Burnet Rose (Rosa pimpinellifolia), Red Fescue (Festuca rubra) and species such as Yellow-wort (Blackstonia perfoliata), Autumn Gentian (Gentianella amarella), Hound'stongue (Cynoglossum officinale), Carline Thistle (Carlina vulgaris) and Pyramidal Orchid (Anacamptis pyramidalis). Much of the interior of the spit is taken up by a golf course. The inner stony shore has frequent Sea-holly (Eryngium maritimum). Welldeveloped saltmarshes occur at the tip of the spit. Atlantic salt meadow is the principle type and is characterised by species such as Sea-purslane (Halimoine portulacoides), Sea Aster (Aster tripolium), Thrift (Armeria maritima), Sea Arrowgrass (Triglochin maritima) and Common Saltmarsh-grass (Puccinellia maritima). Elsewhere in the outer estuary, a small area of Mediterranean salt meadow occurs which is characterised by the presence of Sea Rush (Juncus maritimus). Below the salt marshes there are good examples of pioneering glasswort (Salicornia spp.) swards and other annual species, typified by S. dolichostachya and Annual Sea-blite (Suaeda maritima). Version date: 26.05.2017 2 of 2 000205_rev17.docx

The inner estuary does not drain at low tide apart from the extreme inner part. Here, patches of saltmarsh and salt meadows occur, with Sea Aster, Sea Plantain (Plantago maritima) and Sea Club-rush (Scirpus maritimus). Beaked Tasselweed occurs in one of the channels.

The site includes a fine area of rocky shore south-east of Malahide and extending towards Portmarnock. This represents the only continuous section through the fossiliferous Lower Carboniferous rocks in the Dublin Basin, and is the type locality for several species of fossil coral.

The estuary is an important wintering bird site and holds an internationally important population of Brent Goose and nationally important populations of a further 15 species. Average maximum counts during the 1995/96-1997/98 period were: Brent Goose 1217; Great Crested Grebe 52; Mute Swan 106; Shelduck 471; Pochard 200; Goldeneye 333; Red-breasted Merganser 116; Oystercatcher 1228; Golden Plover 2123; Grey Plover 190; Redshank 454; Wigeon 50; Teal 78; Ringed Plover 106; Knot 858; Dunlin 1474; Greenshank 38; Pintail 53; Black-tailed Godwit 345; Bar-tailed Godwit 99. The high numbers of diving birds reflects the lagoon-type nature of the inner estuary. The estuary also attracts migrant species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of the island and the habitat remains suitable for these birds.

The inner part of the estuary is heavily used for water sports. A section of the outer estuary has recently been infilled for a marina and housing development. This site is a fine example of an estuarine system with all the main habitats represented.

The site is important ornithologically, with a population of Brent Goose of international significance".

4.2.3.2 Malahide Estuary SPA (004025)

The following description of the **Malahide Estuary SPA (004025)** is extracted from the Site Synopsis (NPWS, 2013) for the site:

"Malahide Estuary is situated in north Co. Dublin, between the towns of Malahide and Swords. The site encompasses the estuary, saltmarsh habitats and shallow subtidal areas at the mouth of the estuary. A railway viaduct, built in the 1800s, crosses the site and has led to the inner estuary becoming lagoonal in character and only partly tidal. Much of the outer part of the estuary is well-sheltered from the sea by a large sand spit, known as "The Island". This spit is now mostly converted to golf-course. The outer part empties almost completely at low tide and there are extensive intertidal flats exposed. Substantial stands of eelgrass (both Zostera noltii and Z. angustifolia) occur in the sheltered part of the outer estuary, along with Tasselweed (Ruppia maritima). Green algae, mostly Ulva spp., are frequent on the sheltered flats. Common Cord-grass (Spartina anglica) is well established in the outer estuary and also in the innermost part of the site. The intertidal flats support a typical macroinvertebrate fauna, with polychaete worms (Arenicola marina and Hediste diversicolor), bivalves such as Cerastoderma edule, Macoma balthica and Scrobicularia plana, the small gastropod Hydrobia ulvae and the crustacean Corophium volutator. Salt marshes, which provide important roosts during high tide, occur in parts of the outer estuary and in the extreme inner part of the inner estuary. These are characterised by such species as Sea Purslane (Halimione portulacoides), Sea Aster (Aster tripolium), Thrift (Armeria maritima), Sea Arrowgrass (Triglochin maritima) and Common Saltmarsh-grass (Puccinellia maritima).

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, Light-bellied Brent Goose, Shelduck, Pintail, Goldeneye, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit and Redshank. 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.

This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It has internationally important populations of Lightbellied Brent Goose (1,104 individuals or 5% of the all-Ireland total) and Black-tailed Godwit (409 individuals or 2.9% of the all-Ireland total) - figures given here and below are mean peaks for the five winters 1995/96-1999/2000. Furthermore, the site supports nationally important populations of an additional 12 species: Great Crested Grebe (63), Shelduck (439), Pintail (58), Goldeneye (215), Red-breasted Merganser (99), Oystercatcher (1,360), Golden Plover (1,843), Grey Plover (201), Knot (915), Dunlin (1,594), Bar-tailed Godwit (156) and Redshank (581). The high numbers of diving ducks reflects the lagoon-type nature of the inner estuary, and this is one of the few sites in eastern Ireland where substantial numbers of Goldeneye can be found. A range of other species occurs, including Mute Swan (37), Pochard (36), Ringed

Plover (86), Lapwing (1,542), Curlew (548), Greenshank (38) and Turnstone (112). The estuary also attracts other migrant wader species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. These occur mainly in autumn, though occasionally in spring and winter. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of Malahide Island. Grey Herons breed nearby and feed regularly within the site. Malahide Estuary SPA is a fine example of an estuarine system, providing both feeding and roosting areas for a range of wintering waterfowl. The lagoonal nature of the inner estuary is of particular value as it increases the diversity of birds which occur. The site is of high conservation importance, with internationally important populations of Light-bellied Brent Goose and Black-tailed Godwit, and nationally important populations of a further 12 species. Two of the species which occur regularly (Golden Plover and Bar-tailed Godwit) are listed on Annex I of the E.U. Birds Directive. Malahide Estuary (also known as Broadmeadow Estuary) is a Ramsar Convention site.".

4.2.3.3 Qualifying Interests and Conservation Objectives

The QIs/SCIs and their respective conservation objectives for each of the relevant European site(s) with an SPR link of note, are detailed in Table 3.

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 (2024)).

QI / SCI (* = priority habitat)	Conservation Status	Conservation Objective
Malahide Estuary SAC (000205)		
Mudflats and sandflats not covered by seawater at low tide [1140]	Good	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Malahide Estuary SAC
Salicornia and other annuals colonising mud and sand [1310]	Good	To maintain the favourable conservation condition of Salicornia and other annuals colonising mud and sand in Malahide Estuary SAC
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Good	To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Malahide Estuary SAC
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	Poor	To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Malahide Estuary SAC
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	Poor	To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Malahide Estuary SAC
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Good	To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Malahide Estuary SAC
Malahide Estuary SPA (004025)		

QI / SCI (* = priority habitat)	Conservation Status	Conservation Objective
Great Crested Grebe (*Podiceps cristatus*) [A005]	Good	To maintain the favourable conservation condition of Great Crested Grebe in Malahide Estuary SPA
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	Excellent	To maintain the favourable conservation condition of Light-bellied Brent Goose in Malahide Estuary SPA
Shelduck (*Tadorna tadorna*) [A048]	Excellent	To maintain the favourable conservation condition of Shelduck in Malahide Estuary SPA
Pintail (*Anas acuta*) [A054]	Excellent	To maintain the favourable conservation condition of Pintail in Malahide Estuary SPA
Goldeneye (*Bucephala clangula*) [A067]	Excellent	To maintain the favourable conservation condition of Goldeneye in Malahide Estuary SPA
Red-breasted Merganser (*Mergus serrator*) [A069]	Excellent	To maintain the favourable conservation condition of Red-breasted Merganser in Malahide Estuary SPA
Oystercatcher (*Haematopus ostralegus*) [A130]	Excellent	To maintain the favourable conservation condition of Oystercatcher in Malahide Estuary SPA
Golden Plover (*Pluvialis apricaria*) [A140]	Good	To maintain the favourable conservation condition of Golden Plover in Malahide Estuary SPA
Grey Plover (*Pluvialis squatarola*) [A141]	Excellent	To maintain the favourable conservation condition of Grey Plover in Malahide Estuary SPA
Knot (*Calidris canutus*) [A143]	Excellent	To maintain the favourable conservation condition of Knot in Malahide Estuary SPA
Dunlin (*Calidris alpina*) [A149]	Excellent	To maintain the favourable conservation condition of Dunlin in Malahide Estuary SPA
Black-tailed Godwit (*Limosa limosa*) [A156]	Excellent	To maintain the favourable conservation condition of Black-tailed Godwit in Malahide Estuary SPA
Bar-tailed Godwit (*Limosa lapponica*) [A157]	Good	To maintain the favourable conservation condition of Bar-tailed Godwit in Malahide Estuary SPA
Redshank (*Tringa totanus*) [A162]	Excellent	To maintain the favourable conservation condition of Redshank in Malahide Estuary SPA
Wetland and Waterbirds [A999]	n/a	To maintain the favourable conservation condition of the wetland habitat in Malahide Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it

4.3 Assessment of Likely Significant Effects

The following sections discuss the potential for likely significant effects on the relevant European site(s), taking into consideration the QIs, SCIs and SSCOs (where available), and assesses whether the Proposed Development has the capacity to

adversely affect the integrity of this European site. Furthermore, due consideration shall be given to species not formally identified but which may be present within Malahide Estuary SAC (000205) and Malahide Estuary SPA (004025) and adversely effected by the Proposed Development, provided that those potential impacts are likely to affect the conservation objectives of the designated site. The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators as detailed in section 3.6.

4.3.1 Habitat Loss and Alteration

The Proposed Development is not within any European site boundaries and is thus not expected to lead to direct removal of habitats or alteration of same. Habitat loss or alteration may occur as a result of potential changes in water quality due to an increase in contaminants and nutrients that may reduce the oxygen levels available in the water and suffocate local flora. in the water could However, potential for water quality deterioration is discussed in more detail below in section 4.3.3.

Silt, sediment and dust reaching the European sites via discharge into the Ratoath Stream, either directly or via interception from groundwater draining towards the estuary could potentially alter habitats. However, the likelihood of any significant amount of silt and sediment reaching Malahide estuary and causing habitat loss and/or alteration is highly unlikely for a number of reasons:

1) The nearest European site (Malahide Estuary SAC) is 19.1km downstream of the Proposed Development. The Ratoath stream is a relatively fast flowing stream at the point where it crosses the Site boundary. By the time it reaches Malahide Estuary it has slowed significantly and becomes a depositing river. This gradual slowing would result in most particle pollutants such as silt or sediment being deposited along the riverbed before they reach the estuary and subsequently any European sites. A study by the EPA titled “Sediment Flux - Measurement, Impacts, Mitigation and Implications for River Management in Ireland” (Bruen *et al*., 2020) concludes that “*Deposited sediment amounts can be assessed visually [as] there was a strong relationship between visual estimates of percentage surface cover and sediment amounts*”. Considering this as a viable metric, it would be highly improbable that any sediment entering the Ratoath Stream from the Proposed Development would be visible by the time it reaches downstream European sites, and therefore unlikely to cause any significant impacts.
2) The Ratoath Stream meanders along its entire route before entering Malahide Estuary. This meandering provides numerous opportunities for the river to deposit any potential pollutants before reaching Malahide Estuary (Fondriest Environmental, Inc., 2014). Furthermore, the 19.1km of vegetation along the banks of the Ratoath Stream would provide vast opportunities for pollutants such as silt, sediment, or oils to be deposited or captured by vegetation (Benda et al., 2005). At this point, they would no longer be freely suspended and would then likely be slowed and released over a longer period of time. By the time they would eventually reach Malahide Estuary and any European site, they would likely be trickling in at such a slow rate that they would significant impacts would be unlikely to occur.

3) A study in the River Liffey estuary (O'Higgins and Wilson, 2005) shows that such a significant amount of mixing occurs within estuarine habitats such that any pollutants (nitrates) entering from the River Liffey are so significantly diluted by the time the reach the far end of the estuary and Irish sea, that they are below detectable limits. The same can likely be said for Malahide Estuary but considering the additional 19.1km of freshwater flowing between the Proposed Development before reaching Malahide Estuary, it is highly improbable that any significant quantity of pollutants would reach these European sites in the first place.
4) The Ratoath Stream contains a relatively steady flow and as it makes its way to Malahide Estuary, it combines with over ten other tributaries to eventually form into the Broadmeadow River. The additional volume of water from all these other tributaries such as the Fieldstown river, the Rowlestown west river, and the Ward river, would be substantial enough to significantly dilute any potential pollutants that may enter Ratoath Stream.
5) The most likely pollutant to enter the Malahide Stream would be silt from the installation of a precast headwall. The SI habitats within Malahide Estuary are estuarine habitats such as mudflats that are comprised of silt and sediment. In a worst-case scenario, the volume of silt that could potentially reach Malahide Estuary would be so small in comparison to the sediment that these habitats are comprised of that it would be insignificant and highly unlikely to alter the habitats.
6) Surface water protection measures will be implemented on Site during construction works to protect on-site surface water bodies and local groundwater during construction. These best practice methodologies are considered necessary for the developer to meet the legal requirements of the Water Framework Directive and are not considered to be mitigation measures for the protection of downstream Designated Sites. In addition, most of the intrusive works at the Site are confined to an area that is buffered by a substantial mature treeline and ground vegetation which would act as a natural barrier to any pollutants before reaching the Ratoath Stream. Regarding the works to the new road, these involve the removal of a roundabout which is buffered from the stream by an area of amenity grassland. Works to the southern arm are not predicted to be intrusive as this area is already surfaced and is included in the redline boundary as an area where works will primarily involve traffic management which will be non-intrusive.

As such, no significant impacts can be expected on the downstream European sites of Malahide Estuary SAC and SPA, and subsequently any further downstream sites such as the Northwest Irish Sea SPA.

4.3.2 Habitat / Species Fragmentation

Habitat fragmentation has been defined as the 'reduction and isolation of patches of natural environment' (Hall et al., 1997 cited in Franklin et al., 2002) usually due to an external disturbance such that an alteration of the spatial composition of a habitat occurs that alters the habitat and 'create[s] isolated or tenuously connected patches of the original habitat' (Wiens, 1989 cited in Franklin et al., 2002). This results in spatial separation of habitat units which had previously been in a state of greater continuity.

As there will be no habitat loss within any European sites, and because the most likely contaminants to reach the downstream European sites would be silt, sediment and dust which is what the protected habitats are largely comprised of (see sections 4.3.1 and 4.3.3), no habitat fragmentation will arise as a result of the Proposed Development on any European sites.

As such, no significant impacts can be expected on the downstream European sites of Malahide Estuary SAC and SPA, and subsequently any further downstream sites such as the Northwest Irish Sea SPA.

4.3.3 Changes in Water Quality and Resource

The Ratoath Stream is culverted to the south of the Site. A pollution event such as an accidental fuel spillage, or heavy rainfall could carry silt/sediment into the local surface water network and Ratoath Stream, which could in turn reach the downstream European sites associated with Malahide Estuary. Such an event, although unlikely to occur, is also unlikely to affect the receiving aquatic environments of those European Sites based on a number of factors. These are primarily due to the substantial distance between the sites and the significant dilution that would occur within the 19.1km of river between the two sites. These reasons are described in detail in section 4.3.1 above.

Additionally, the majority of works at the Site, particularly the proposed residential works will be confined to areas of '*Low'* risk groundwater vulnerability. Works to '*Extreme'* risk areas are confined to largely non-intrusive works such as traffic management along the current southern arm of the roundabout. Intrusive works involving groundworks such as foundation or road installations are largely confined to low-risk areas and so the potential for groundwater contamination is significantly reduced lessened.

The CMP (Donnachadh O'Brien & Associates Consulting Engineers, 2024) accompanying this application has been prepared to ensure all works associated with the Construction Phase of the Proposed Development comply with relevant legislation and best practice guidelines, including:

- European Union Water Framework Directive WFD (2000/60/EC).
- European Communities (Water Policy) Regulations, 2003.
- European Communities Environmental Objectives (Surface Water) Regulations 2009.
- The EU Floods Directive 2007/60/EC.
- European Communities (Assessment and Management of Flood Risks) Regulations 2010.

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor will cooperate fully with the Environment Section of Meath County Council in this regard.

The standard best practise measures outlined in the CMP (including attenuation systems, settlement management basins, no direct discharge to local watercourses, etc.) will protect the surface water networks surrounding the Site. As a result, these general measures will also protect the water quality within Malahide Estuary and its

associated European sites**.** For details of these measures please refer to the CMP accompanying this submission.

SuDS measures are proposed within the design of the Proposed Development (see section 1.4.2.1.1. The SuDS measures will control surface water run-off from the Proposed Development and remove pollutants from surface water discharged from the Site during the Operational Phase. The proposed SuDS measures will therefore attenuate the flow and improve the quality of surface water eventually discharged to the Ratoath Stream, and therefore to downstream European sites.

Therefore, the hydrological surface water pathway from the Site of the Proposed Development, during both the Construction and Operational Phases, is considered insignificant and potential significant impacts to downstream European sites, namely the **Malahide Estuary SAC (000205)** and **Malahide Estuary SPA (004025)** and subsequent downstream sites is considered negligible.

4.3.3.1 Foul Water Pathway

The Proposed Development will be served by separate foul water and surface water sewers during its Operational Phase. It is noted that there is a weak indirect hydrological pathway between the Site and European sites in Dublin Bay via this sewerage network, which will eventually be processed and treated at Ringsend Wastewater Treatment Plant (WwTP) prior to discharge to Dublin Bay. The main area of dispersal of the treated effluent from Ringsend WwTP is in the Tolka Basin and around North Bull Island.

However, the potential for foul waters generated at the Site of the Proposed Development to reach these European sites within Dublin Bay and cause significant effects, during the Construction and Operational Phases, is deemed to be negligible due to the following reasons:

- The ongoing upgrade works to Ringsend WwTP which will increase the capacity of the facility from 1.6 million Population Equivalent (PE) to 2.4 million PE (see section 4.3.6.2 below for more details).
- It is considered that effects on marine biodiversity and the European sites within Dublin Bay from the current operation of Ringsend WwTP are unlikely (see section 4.3.6.2 below for more details).
- The main area of dispersal of the treated effluent from Ringsend WwTP is in the Tolka Basin and around North Bull Island. South Dublin Bay is unaffected by the effluent from the plant (Irish Water, 2018).
- The increase of the PE load at the facility as a result of the Proposed Development, assuming each PE unit was not previously supported by the WwTP, is considered to be an insignificant increase in terms of the overall scale of the facility. The increased load does not have the capacity to alter the effluent released from the WwTP to such an extent as to result in likely significant effects on European sites in Dublin Bay. The potential for in-combination effects relating to foul water treatment at Ringsend WwTP is discussed in section 4.3.6.2 below.

As such, the hydrological impact pathway posed by foul waters generated by the Proposed Development and treated at Ringsend WwTP will not cause likely significant effects on European Sites and is therefore **screened out at this stage**.

4.3.4 Disturbance and / or Displacement of Species

As outlined in section 4.3.3 above, the hydrological link between the Site and the European sites does not have the potential to cause disturbance and/or displacement to the bird and aquatic species associated with the above European sites.

4.3.5 Changes in Population Density

The Proposed Development does not have the capacity to cause any significant changes in the population density of any species within any European site.

4.3.6 Potential for In-combination Effects

Although the Proposed Development is not considered to have the capacity to cause significant effects on any European sites alone, it is important to consider the potential for cumulative effects with other plans and/or projects. The following sections outline existing granted or pending planning permissions in the vicinity of the Proposed Development and assess the potential for adverse in-combination effects on any European sites.

4.3.6.1 Existing Planning Permissions

A search of planning applications located within a 500m radius of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Meath County Council Planning Applications online map. 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 likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable.

There are several existing planning permissions on record in the area, approximately 500m surrounding the Site. It is noted that the majority of the developments within the vicinity of the Site of the Proposed Development are applications granted for small scale extensions and alterations to existing permitted developments. The larger developments in the vicinity of the Proposed Development are outlined in Table 4:

TABLE 4. GRANTED AND PENDING DEVELOPMENT APPLICATIONS WITHIN 500 M OF THE PROPOSED DEVELOPMENT. LOCATION AND DISTANCE GIVEN IS RELATIVE TO THE PROPOSED DEVELOPMENT.

Planning Reference	Planning Authority	Status	Location
2460017	Meath County Council	RFI	Ashbourne Road - R125, Ratoath, Co Meath
Development Description Construction of a road with footpath, bicycle lane, lighting, and, all associated site works, to access and service the lands zoned E2 – General Enterprise and Employment. **Potential for In-combination effects**			

Planning Reference	Planning Authority	Status	Location
This application has received a request for further information on surface water attenuation and drainage details. It is not expected this application would be granted without the appropriate surface water management, and so no in combination effects are expected.			

4.3.6.2 Foul Water Treatment and Operation of Ringsend WwTP

This section addresses in more detail the general issue of potential in-combination effects with Ringsend WwTP arising from the Operational Phase of the Proposed Development and other Developments, including future developments.

In summary, the impact of the Proposed Development and any future development has already been appropriately considered and assessed as part of the application process for the existing planning permissions pertaining to Ringsend WwTP.

The 2012 Ringsend WwTP application for planning permission (Ref. PL.29N.YA0010) was for a PE of 2.4 million and was predicated on the findings of the 2005 Greater Dublin Strategic Drainage Study (GDSDS). The GDSDS set out the drainage requirements for the Greater Dublin Area (GDA) up to 2031. The GDSDS relied on the Regional Planning Guidelines (RPGs) and the National Spatial Strategy (NSS) in order to estimate the future projected population increases for the GDA. The studies indicated a predicted growth in population from 1.2 million in 2002 to just over 2 million in 2031 for the GDA region.

In June 2018 Irish Water applied for and subsequently received planning permission in 2019 for upgrade works to the Ringsend WwTP facility. The first phase of upgrade works to Ringsend WwTP was completed in December 2021, which increased the capacity of the plant by 400,000 P.E. These works, together with the future works permitted will ultimately increase the capacity of the facility from 1.6 million P.E. to 2.4 million P.E. by 2025 (Irish Water website: *https://www.water.ie/projects/local-projects/ringsend/*).

Therefore, both the initially permitted 2012 upgrade and the permitted 2019 revised upgrade (Ref. ABP-301798-18) for Ringsend WwTP take account of population growth up to 2.4 million PE. Both applications were subject to EIA and therefore accompanied by an EIAR and accompanied by an AA screening report and an NIS.

Notwithstanding the above, on an individual basis, the Operational Phase of the Proposed Development will have an imperceptible effect on the habitats/species/qualifying interests listed within the relevant European sites specifically South Dublin Bay and River Tolka Estuary SPA (004024), North Bull Island SPA (004006), and North Dublin Bay SAC (000206), in terms of flows, relative to the total amount of waste water currently being received at Ringsend WwTP.

Under the heading of *"Potential impact – Discharge of treated effluent, impacts on water quality, effects on qualifying interests"*, the NIS (Irish Water, 2018b) for the Ringsend Wastewater Treatment Plant 2019 revised upgrade provides as follows:

> *"In the operational phase, the proposed upgrade of the Ringsend WWTP Component will result in an increase in the plant capacity and also an improvement*

in the final effluent quality. This will result in a reduction in the licensed parameters discharged into the receiving water, with significantly reduced quantities in respect of ammonia and phosphorous."[1]

This NIS goes on to state as follows:

"Overall no significant adverse effects are foreseen and indeed, a slight positive effect is possible. Effects of discharge during the operational phase of the project from the upgrade project will therefore have an imperceptible impact on habitats listed within these European sites."[2]

In respect of this issue, the NIS concludes as follows:

"Thus, there is no potential for in-combination impacts of any other plan and project with the Ringsend WWTP Component of the proposed Upgrade Project."[3]

The EIAR for the ongoing upgrade at Ringsend WwTP (Irish Water, 2018a) also details the lack of any significant impacts to European sites observed as a result of the current stormwater overflow discharge levels at the WwTP. During storm events, once the capacities of the holding tanks are surpassed, the WwTP releases overflow via an outfall at Pigeon House Rd into the lower Liffey estuary.

The EIAR carried out in relation to said upgrade concluded that in the 'do nothing' scenario, i.e., wherein the upgrade is not carried out; the current existing levels of nutrient input to Dublin Bay as a result of stormwater overflow from the WwTP, are not deemed to pose significant threats to the integrity of European sites located within or adjacent to Dublin Bay, or any of their Conservation Objectives regardless of said upgrade.

The EIAR report acknowledges that under the do-nothing scenario "*the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WWTP*", which could result in a decline in biodiversity and the deterioration of the biological status of Dublin Bay (Irish Water, 2018a). Nevertheless, these negative impacts of nutrient over-enrichment are considered "*unlikely*". This is because historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna. The EIAR notes that "*although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area*." Furthermore, the EIAR notes that significant impacts on waterbird populations foraging on invertebrates in Dublin Bay due to nutrient over-enrichment are "*unlikely*" to occur. What is important to note is that the do-nothing scenario predicts that nutrient and suspended solid loads from the WwTP will "*continue at the same levels and the impact of these loadings should maintain the same level of effects on marine biodiversity*" and that "*if the status quo is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay*."

[1] Section 4.5.1 at page 32

[2] Section 4.5.1 at page 33

[3] Section 4.5.1 at page 34

Therefore, it can be concluded that likely significant effects on marine biodiversity and the European sites within Dublin Bay from the *current* operation of Ringsend WwTP are unlikely. Importantly, this conclusion is not dependent upon any future works to be undertaken at Ringsend. Thus, in the absence of any upgrading works, significant in-combination effects to European sites in this regard **are not deemed likely to arise,** and therefore likely significant effects involving foul waters produced by the Proposed Development also do not have the potential to occur.

It is therefore concluded that there is **no possibility for any significant in-combination effects** to European sites involving the Proposed Development.

4.4 Relevant Policies and Plans

The local policies and plans detailed in section 2.2 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 Meath 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 Meath 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.

TABLE 5. SUMMARY OF IMPACT ASSESSMENT ON EUROPEAN SITES AS A RESULT OF THE PROPOSED DEVELOPMENT.

Site	Habitat Loss / Alteration	Habitat or Species Fragmentation	Disturbance and/or Displacement of Species	Changes in Population Density	Changes in Water Quality and/or	In-combination effects	Stage 2 AA Required
SAC							
Malahide Estuary SAC (000205)	No	No	No	None	None	None	No
SPA							
Malahide Estuary SPA (004025)	No	No	No	None	None	None	No

5 APPROPRIATE ASSESSMENT SCREENING CONCLUSION

The Proposed Development at Ballybin Road, Ratoath, Co. Meath 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 **may be excluded** that the Proposed Development will have a significant effect on any of the European sites listed below:

- Malahide Estuary SAC (000205).
- Malahide Estuary SPA (004025).
- Rogerstown Estuary SAC (000208).
- Rogerstown Estuary SPA (004015).
- North West Irish Sea SPA (004236).
- South Dublin Bay SAC (000210).
- North Dublin Bay SAC (000206).
- South Dublin Bay and River Tolka Estuary SPA (004024).
- North Bull Island SPA (004006).

In carrying out this AA screening, mitigation measures specifically put in place to protect European sites have 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, can be excluded in light of the above listed European sites' conservation objectives. Thus, there is no requirement to proceed to Stage 2 of the Appropriate Assessment process; and the preparation of a NIS is not required.

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