

Deansgrange FRS

Screening for Appropriate Assessment

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Contract

This report describes work commissioned by Joseph Craig of Dún Laoghaire Rathdown County Council, by a letter dated 16th of December 2019. Michael Coyle of JBA Consulting carried out this work.

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Purpose

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Abbreviations

AA	Appropriate Assessment
CFRAM	Catchment Flood Risk Assessment and Management
CIEEM	Chartered Institute of Ecology and Environmental Management
DLRCC	Dún Laoghaire Rathdown County Council
DoEHLG	Department of the Environment, Heritage and Local Government
EC	European Community
EPA	Environmental Protection Agency
EU	European Union
GSI	Geological Survey of Ireland
IROPI	Imperative Reasons of Over-riding Public Interest
NBDC	National Biodiversity Data Centre
NPWS	National Parks and Wildlife Services
OPW	Office of Public Works
OPR	Office of the Planning Regulator
PoP	Plan or Project
RBMP	River Basin Management Plan
QI	Qualifying Interest
SAC	Special Area of Conservation, protected under the EU Habitats Directive
SPA	Special Protection Area for birds, protected under the EU Habitats Directive
TTS	Temporary Threshold Shift
WFD	Water Framework Directive

1 Introduction

1.1 Background

JBA Consulting Engineers and Scientists Ltd (hereafter JBA) has been commissioned by Dún Laoghaire Rathdown County Council (DLRCC) to undertake a Screening for Appropriate Assessment in relation to the Deansgrange Stream Flood Relief Scheme from Deansgrange to Loughlinstown. The proposed development which will be submitted under Part 8 of the Planning and Development Act (2000) as amended, consists of development of a flood relief scheme to minimise the risks currently posed to people, the community, social amenity, environment and landscape.

Deansgrange Stream has a history of flooding. A flood event occurred at Glenavon Park in 2008 caused by water backing up at a footbridge. The footbridge has since been replaced. Regular flood events in the recent years have occurred at Seafield Court, Killiney Hill Road and Achill Road affecting several properties in these areas. Reoccurring flood events have been reported upstream, in the Little Meadow area, Pottery Road and Johnstown Road.

Screening for appropriate assessment is intended to be an initial examination which must be carried out by the Planning Authority or An Bord Pleanála as the competent authority. However, this screening is completed on behalf of the project proposer to show that likely significant effects have been considered in the project development and design, and where necessary progress with further assessment.

1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

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

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

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

Article 6(4) states:

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

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

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 / 2011).

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DoEHLG) (2009). These guidance documents identify a staged approach to conducting an AA, as shown in Figure 1-1.

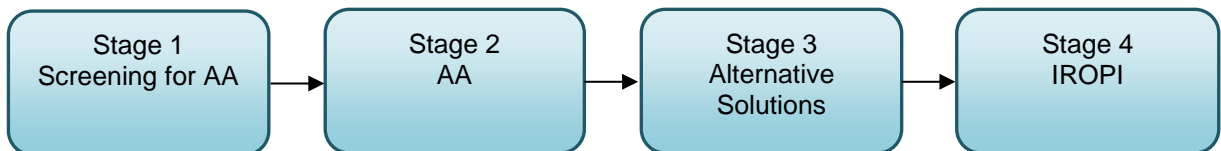


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DoEHLG, 2009).

1.3.1 Stage 1 - Screening for AA

The initial, screening stage of the Appropriate Assessment is to determine:

whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation

if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects

For those sites where, potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the site's conservation objectives (i.e. the process proceeds to Stage 2).

1.3.2 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

1.3.3 Stage 3 - Alternative Solutions

Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

1.3.4 Stage 4 - IROPI

Where adverse impacts of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case compensatory measures will be required.

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant impacts are identified, the process stops at stage 1. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site.

This report is in support of a Stage 1 Screening for Appropriate Assessment.

1.3.5 Recent judgements of the Court of Justice of the European Union (CJEU) and how they are used in this assessment

The CJEU issued a ruling on the consideration of avoidance and reduction measures as a result of the case known as *People over Wind, Peter Sweetman v Coillte Teoranta* (Case C-323/17). This judgement stated that measures intended to reduce or avoid effects on a European site should only be considered within the framework of an AA, and it is not permissible to take into account such measures at the screening stage. In practice, this means that any activities that are not integral to the project (i.e. the project could conceivably take place without them) and have the effect of avoiding or reducing an impact on a European site, cannot be considered at the screening stage.

The CJEU ruling in the case of *Grace & Sweetman* [2018] (C-164/17) clarified the difference between avoidance and reduction (mitigation) measures and compensation. Measures intended to compensate for the negative effects of a project cannot be taken into account in the assessment of the implications of a project, and instead are considered under Article 6(4). This means that any project where an effect on the integrity of a European site remains and can only be offset by compensation, would need to proceed under Article 6(4), demonstrating “imperative reasons of overriding public interest”.

The judgements referred to as the Dutch Nitrogen cases [2018] (C-293/17 and C-294/17) have important implications for projects that could potentially impact on sites that are exceeding critical thresholds for input of damaging ammonia (but could also reasonably apply where other nutrients are impacting European sites). The judgements state that the use of thresholds to exclude project impacts is acceptable in principle, and that strategic plans can be used as mitigation but only with consideration of the certainty (or otherwise) of the outcomes of those strategic plans. It clarifies that where the status of a habitat type is already unfavourable the possibility of authorising activities which increase the problem is necessarily limited.

The CJEU ruling in the case of *Holohan v An Bord Pleanála* (C-462/17) also clarified the importance in AA of taking into account habitat types and species outside the boundary of the European site, where implications of the impacts on those habitat and species may impact the conservation objectives of the European site. In this assessment functionally linked and supporting habitat for species outside of European site boundaries are assessed where they could potentially impact the conservation objectives of any screened in European sites.

1.4 Methodology

The Screening for Appropriate Assessment has been prepared having regard to the Birds and Habitats Directives, the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended and relevant jurisprudence of the EU and Irish courts. The following documents have also been used to provide guidance for the assessment:

- DoEHLG (2009 rev 2010) *Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government (DoEHLG, 2009).
- Office of the Planning Regulator (2021) *OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management* (OPR, 2021).
- European Communities (EC) (2018) *Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission, 2000).
- EC (2002) *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*, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission et al., 2002).
- EC (2007) *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission*. European Commission Management (European Commission, 2007).

1.4.1 Desktop Study

A desktop study was conducted of available published and unpublished information, along with a review of data available on the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) web-based databases, in order to identify key habitats and species (including legally protected and species of conservation concern) that may be present within ecologically relevant distances from the project as explained below. A baseline habitat assessment was performed using satellite imagery of the site. The data sources below (accessed June 2022) were consulted for the desktop study:

- Aerial photography available from www.osi.ie and Esri World Imagery.
- NPWS website (www.npws.ie) where Natura 2000 site synopses, data forms and conservation objectives were obtained along with Annex I habitat distribution data and status reports.
- River Basin Management Plans (www.wfdireland.ie)
- NBDC Biodiversity Maps (maps.biodiversityireland.ie)
- Catchments (www.catchments.ie)
- Environmental Protection Agency Maps (<https://gis.epa.ie/EPAMaps>)
- Geological Survey Ireland (GSI) website (www.gsi.ie)
- GSI - Groundwater data viewer (<https://dcenr.maps.arcgis.com>)
- Planning Applications (myplan.ie)

1.4.2 Ecological Site Survey

Ecological site surveys were by JBA Ecologist Patricia Byrne, and Harry Jones of JB Barry on the 27th of February 2020, and by JBA Ecologist Malin Lundberg, and Dr Niamh Burke of Coiscéim Consulting on the 20th of August in 2020.

JBA Ecologist Patricia Byrne conducted a bird survey of Glenavon Park and upstream of Kilbogget Park by the ponds. A further survey of areas where vegetation and/or trees are to be removed was conducted by Ecologist Mark Desmond on the 30th of September 2022.

An instream survey for Otter was conducted upstream of Killiney Hill Road Bridge by JBA ecologists William Mulville and Mark Desmond in November 2022. A Camera trap survey was conducted in association with this instream survey. Bat emergence and activity surveys along the treeline locate at Killiney Hill Road Bridge were conducted by JBA Ecologists Patricia Byrne and William Mulville on the 11th of May 2023.

A riparian bird survey was conducted by JBA Ecologists Mark Desmond and Dominic Tilley on the 19th of May. These riparian bird surveys were conducted instream between the inlet of the Seafield Culvert and the northern boundary of Glenavon Park, as well as 50m upstream and 100m downstream of Granville Road culvert

A survey of the pedestrian bridge crossing the Shanganagh River was conducted to assess impact resulting from the proposed placement of a bailey bridge on the 14th of June 2023.

The ecological walkover surveys recorded habitats and protected species, following the methods outlined in the documents below:

- Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping (Smith et al. 2011).
- Fossitt, J. (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt 2000).
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009b).

Aerial photographs and site maps assisted the survey. Habitats have been named and described following Fossitt (2000). Nomenclature for higher plants principally follows that given in The New Flora of the British Isles 4th Edition (Clive Stace 2019). Identification of Irish plants generally follows Webb's An Irish Flora (Parnell and Curtis, 2012).

1.4.3 In-combination Assessment

The in-combination assessment followed the process for in-combination set out by the DTA Handbook (Tyldesley and Chapman, 2013). The in-combination impacts are considered only after the assessment of the project alone. If the result of this is that the project will have no effect at all on a European site, then no in-combination assessment would be necessary. However, where there is no adverse effect on site integrity, but some adverse effect an assessment of this adverse effect in-combination with other plans or projects is carried out. Other plans or projects were searched for using the National Planning Application Database, EIA portal and Myplan.ie databases all accessed online. If no other plans or projects are identified, then the assessment is complete. Where other plans or projects are identified then initially a review is made of its AA screening, or AA, and if the Competent Authority for the plan or project has made a final determination of no effect on the integrity of any European site, either alone or in-combination, this determination is used in this assessment. Where there is not a full AA, or the findings are unclear or out of date, the plan or project documentation is checked for credible evidence of real (not hypothetical) risk to a European site. Where these are identified then a detailed assessment is carried out. A summary of the approach is presented in Figure 1-2: .

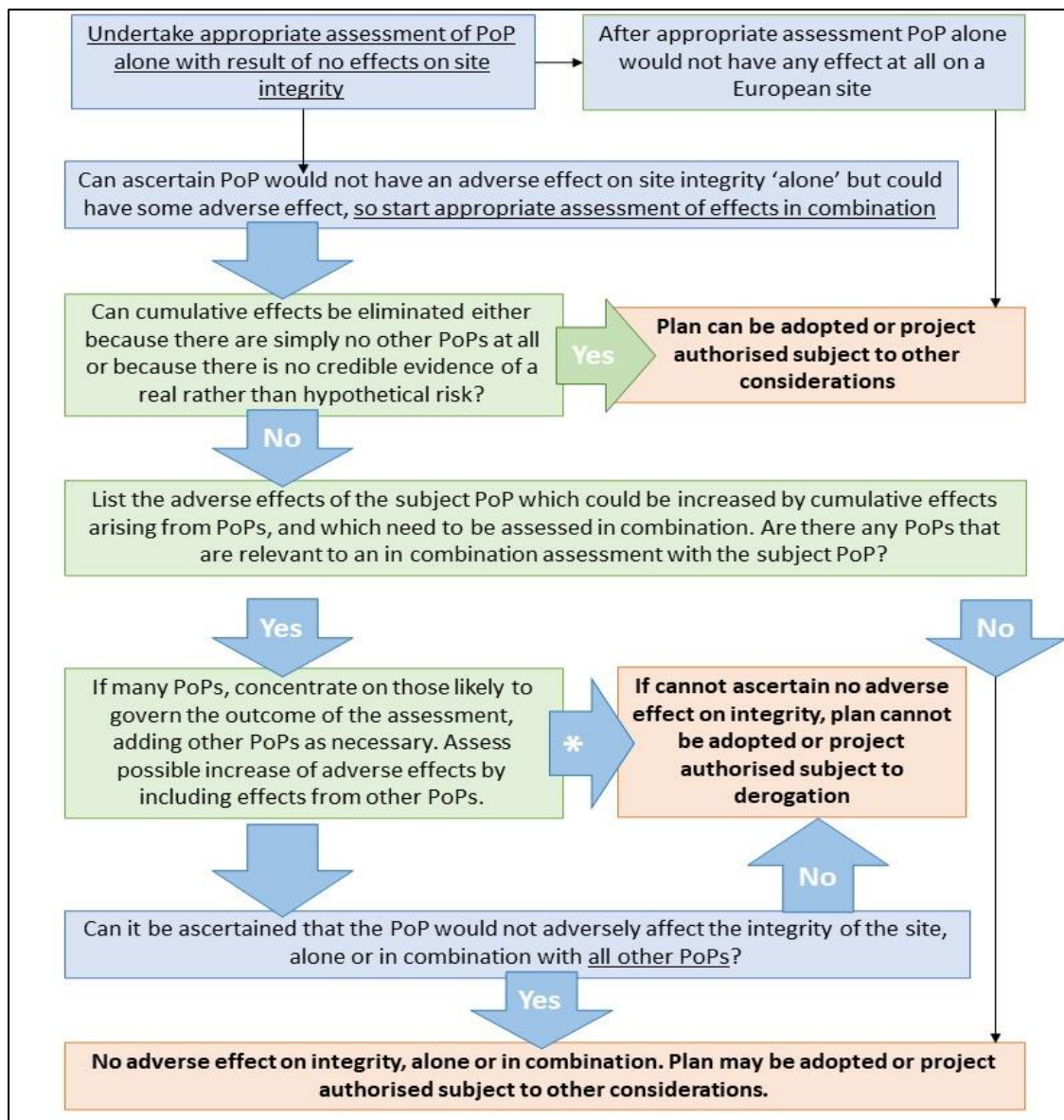


Figure 1-2: Flow diagram of process for in-combination assessment (modified from Chapman & Tyldesley, 2012)

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features only for features where this is a residual or non-significant impact. Potential sources of cumulative impacts were sought within an area where there is the potential for a significant impact on relevant Natura sites identified in Section 4.

1.5 Limitations and Constraints

The screening assessment necessarily relies on some assumptions, and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since surveys were undertaken cannot be accounted for.
- However, the site surveys have followed CIEEM (2019) Advice note on the lifespan of ecological reports and surveys.
- Where field data and desktop data are limited, the precautionary principle is utilised when determining potential ecological sensitivities within the proposed schemes Zol.
- Certain field surveys were restricted to the zone of influence of proposed works, should the proposed works change, further field surveys may be required.

2 Project Description

2.1 The 'Project'

The proposed development is not directly connected with or necessary to the management of any Natura 2000 site and may have potential adverse impacts upon the Natura 2000 sites identified in Section 4. Therefore, the proposed project is subject to the requirements of the AA process.

2.2 Site location

The area of the proposed scheme covers an approximately 325m wide distance on either side of the Deansgrange Stream (sometimes referred to as the Kill of the Grange Stream), and it follows for approximately 5.3km from Deansgrange in the northwest, through Clonkeen Park, Kilbogget Park and Glenavon Park, before turning eastwards through Loughlinstown to the Irish Sea. The furthestmost downstream section is culverted until it has passed under the Dublin-Wexford railway line and reaches an outfall in the Irish Sea at Killiney Bay. The site encompasses a section of the Bray Road (N11).

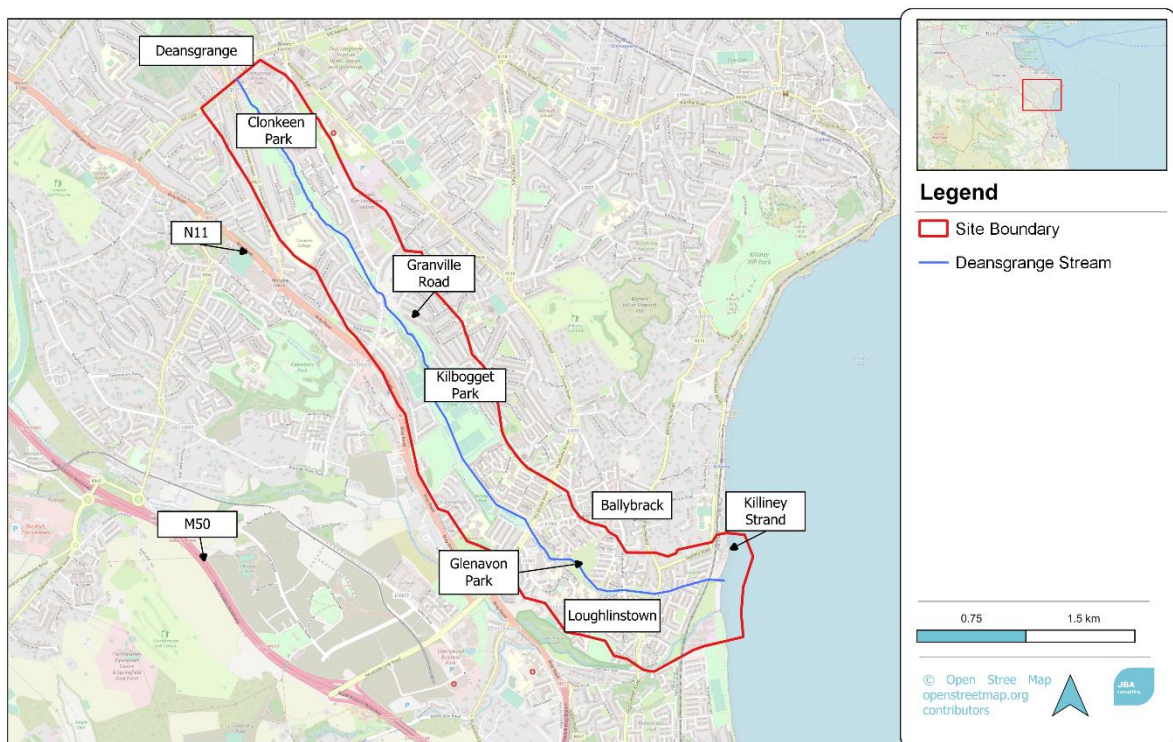


Figure 2-1: Site location and boundary of works (OSM, 2023)

2.3 Proposed project

The works associated with the Deansgrange Flood Relief Scheme (FRS) extend through several locations across the Deansgrange Stream catchment, all at or in close proximity to the stream, between Johnstown Rd / Granville Rd and the environs of the Dublin-Wexford Rail line.

The proposed scheme consists of the installation of a 1200mm diameter tunnelled overflow culvert underneath the railway, the provision of additional storage in Glenavon Park, a series of flood containment walls upstream of the Killiney Hill Road Bridge, including upgrading the parapet of the existing bridge, upgrade works in the existing culvert at Granville Road, the upgrade of the existing screen at the entry of the Seafield culvert, installation of additional coarse screens and the provision for future adaptation of all the measures listed to the impact of climate change on the modelled flood levels.

The Deansgrange FRS' main objective is providing the required Standard of Protection (SoP) against floods caused by the 1 in 100 year design storms across the Deansgrange catchment. This area, studied as part of the wider Loughlinstown catchment, had been designated at risk of flooding in the

Eastern Catchment Flood Risk Assessment and Management (CFRAM). The works undertaken within the Deansgrange FRS will manage this risk.

2.3.1 Johnstown Road

The flood protection measure required at Johnstown Road will consist of the relocation of an existing pedestrian entrance serving the walkway at the southwest in Clonkeen Park. A new entrance matching the characteristics of the existing entrance will be installed at a distance of 47m to the north. A short section of the existing masonry stone wall and railing will be removed to accommodate the new entrance. The new masonry stone wall and decorative railing will be constructed at the location of the existing entrance to match the existing masonry wall features.

To facilitate the continued circulation of pedestrians throughout the park, a new 4m wide footpath of length 30m will be installed at acceptable gradients (e.g. 1/21) to integrate Johnstown Road and the existing circulation route. The existing public cycle path will be extended north to facilitate continued access for cyclists to Clonkeen Park.

2.3.2 Granville Road

The flood relief measure required at Granville Road will consist of the replacement of 2 No. twin Concrete 1050mm dia. pipes which traverse beneath the existing road structure in a North-South direction with a new concrete culvert (inverted U shape) with dimensions of 1.2m high x 3m wide. New concrete headwalls will be constructed at the upstream and downstream face of the culvert. The culvert will extend the full width of the road carriageway including grass verge and footpaths, approximately 20m.

2.3.3 Glenavon Park

The flood relief measure proposed at Glenavon Park is an offline flood storage system within the existing greenspace adjoining the stream and the housing estate at Gleanntan. Two offline detention basins and a new flood defence embankment at the southern section of the park will provide a storage capacity of up to 9,615m³ during flood events. The Total Water Level (TWL) within the park will be controlled by a flow control structure which will be installed on the existing stream and also form part of the flood defence embankment structure. The new detention basins will be sloped at a gradient of 1:3 and include a new wetland which will seek to generate habitat opportunities along with some native planting. Included will be a series of meandering swales lined with stone to provide the permanent water to the sedimentation pond and wetland. The swales will be fed by a nearby surface water source to the north and local drainage.

The new flood defence embankment will be constructed to a level of 14.00mOD and will be integrated into the existing landscape to the east and west of the park. Integration of the embankment with existing levels will include new pedestrian pathways with viewing areas, promoting active travel from Gleanntan along the existing pathways on the east of the stream. The top of the embankment will be relatively flat and will be graded at a slope of 1:3 to meet existing ground levels. To traverse the stream from one side of the park to the other at the footpath, a new pedestrian bridge is proposed. This will be installed directly over the spillway.

Where the flood defence embankment adjoins the stream, a pipe will convey the main channel flow with a new bespoke headwall with rip rap or similar at either face. Directly above the main channel flow, the flow control weir and spillway will be installed to limit the top water level during a storm event. The wing walls for the new pipe within the river channel and spillway will also act as retaining walls for the flood defence embankments. The existing footpaths and bridge will be removed.

2.3.4 Killiney Hill Road

The proposed flood defence measure at Killiney Hill Road will consist of new walls of up to 1.5m in height along the boundaries of the properties upstream of the bridge and an upgrade to the existing bridge parapet. The new flood defence walls will be constructed of reinforced concrete and supported by precast or cast in situ piles with an interconnecting ground beam/ pile cap. This foundation has been specifically designed to mitigate any impact the foundations may have on the existing mature tree roots. In locations where the trees are not impacted, the walls will be supported by a conventional strip foundation. The new walls will be constructed to a total length of 240m; 103m and 130m on the northern and southern embankments respectively. At the upstream face of the existing bridge, c.13m of stone

parapet and c.8m windward boundary wall will be upgraded and reinforced. The walls will be clad on both façades and hand railings will be installed as required. A 7m long embankment will be also added at the northwest end of walls.

2.3.5 Seafield Screen

A series of proposed works to upgrade and install new screens have been included as part of the FRS. These will include the following works:

- A new debris screen is proposed at the entrance to the existing Seafield culvert. The works will include the replacement of adjoining walls and the onsite installation of a debris screen manufactured offsite. A horizontal and an inclined panel will provide the screening with a new working platform for maintenance.
- A new coarse screen is proposed to be installed at the pedestrian bridge adjoining the Abberley estate and upstream of Killiney Hill Road.
- The existing screens at Shanganagh Road and the Fish Pass in the environs of St. Columbanus National School are proposed to be upgraded. The existing screens and associated ancillaries will be demolished and replaced with new foundations, support structures and screens.

2.3.6 Seafield Railway Culvert

The current proposal allows for the installation of an overflow to the Seafield Culvert, consisting of the following elements:

- A 1200mm concrete pipe jacked sewer c.47m, installed underneath the existing railway line, including entry and exit shafts and temporary surcharge zones.
- A 1800mm concrete pipe c.119m section installed using open cut techniques between the exit shaft and the outfall.

Additional works to connect the trenchless and open cut sections of the overflow sewer, including a flow control weir and an outfall structure to the Deansgrange Stream.

2.3.7 Site compounds and access pathways.

Site compounds will be located on the amenity green spaces of the various housing estates and urban park within the site area. These compounds will be located +50m from the nearest watercourse. Access route will be along existing pathways and suburban roads for the majority of the scheme, with some access routes present through parkland.

Access pathways may require the use of a bailey bridge crossing the Deansgrange stream at Glenavon and a supporting bailey bridge on top of the existing bridge over the Shanganagh River near the WWTP so that heavy machinery are supported. The bailey bridge over the Shanganagh River will require piled foundations to support the weight of the bridge.

Vegetation removal will be restricted to removal of a low number of immature sycamore trees at Seafield Ct to facilitate entry for the proposed site compound within this amenity green space.

2.3.8 Plans

An overview of the proposed works is shown in the Buildability Report (JBB, 2023) which accompanies this report

2.3.9 Excavations

Maximum depths of 8.0m will be reached during the construction of culvert pipe under the railway near the stream outfall, however the majority of excavations will not be as deep as this.

2.3.10 Duration of the Works

Works are expected to take approximately 18 months in total and will be completed in phases following environmental constraints such as breeding birds and seasonal restrictions to instream works. Works are expected to last until July 2026.

2.3.11 Project Zone of Influence (Zol)

The Zone of Influence (Zol) for the project is based on a judgement of the likely extent of the ecological impacts. This will vary for different ecological features, depending on their sensitivities to environmental change. The Zone of Influence for this project has been assessed based on the Source-Pathway-Receptor model following the most recent OPR practice note (OPR, 2021);

- OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management

As the scale of proposed works are considered of 'Project' status, Natura 2000 sites a 5km range of the proposed scheme were examined in relation to surface water and groundwater / ground-to-surface water pathways (i.e., local surface water sub-catchments and groundwater bodies / aquifers), with an extended 15km range for those with a downstream hydrological connection and 10km for groundwater connections. As the project involves instream works within the Deansgrange Stream, all ecological receptors including but not limited to Natura 2000 sites, sensitive habitats and species within 100m of the stream and within 5km of the stream's outfall have been considered in relation to project associated impacts.

In respect to Zol for air pollution (emissions and dust), Natura 2000 sites within a 500m buffer zone of the scheme were considered as per the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014), including ex-situ foraging habitats utilised by QI species associated with local Natura 2000 sites. Furthermore, a 300m disturbance buffer from boundaries of the proposed scheme has been incorporated into the Zol in order to account for QI species potentially foraging within ex-situ habitats.

This means the final 'Zone of Influence' can be a complex shape not easily defined by a simple distance figure, but in this way the assessment includes all relevant sites whilst avoiding unnecessary inclusion of other sites

3 Existing Environment

3.1 Baseline conditions

Ecological surveys of the study area were conducted by JBA Ecologists Malin Lundberg with Dr Niamh Burke of Coiscéim Consulting on the 27th of February 2020, by JBA Ecologist Patricia Byrne on 27 March 2020, and on 20th of August in 2020 alongside Harry Jones of JB Barry.

Further habitat surveys were conducted by JBA Ecologists Mark Desmond and Patricia Byrne on the 30th of September 2022 and the 14th of June 2023. These were surveys of previously unsurveyed lands and not repeat surveys.

3.2 Waterbodies within the Vicinity of the Proposed Site

The proposed site lies within the Water Framework Directive (WFD) Avoca-Vartry catchment, and within the Dargle_SC_010 sub-catchment (EPA, 2022). There are 3 identified watercourses within the area of the project; Carrickmines Stream (Carrickmines Stream_010), Deansgrange Stream (Kill of the Grange Stream_010) and the Shanganagh River (Shanganagh_010). There is one watercourse that does not pass through the boundary of the project; Brewery Stream (Brewery Stream_010); this watercourse will not be assessed further as it lies in a different subcatchment to the site. These watercourses, along with their WFD status and current risk are listed in Table 3-2 below, and are mapped in Figure 3-1. Meanwhile, these rivers have their outfalls into the Irish sea; this area is not a listed WFD transitional waterbody, and has no assessment of its quality (EPA, 2022).

Table 3-1: The WFD watercourses within the Zol of the development

WFD Watercourse	WFD Status	WDF Risk
Brewery Stream_010	Moderate	Under Review
Carrickmines Stream_010	Moderate	Moderate
Kill of the Grange Stream_010	Poor	At Risk
Shanganagh_010	Moderate	At Risk

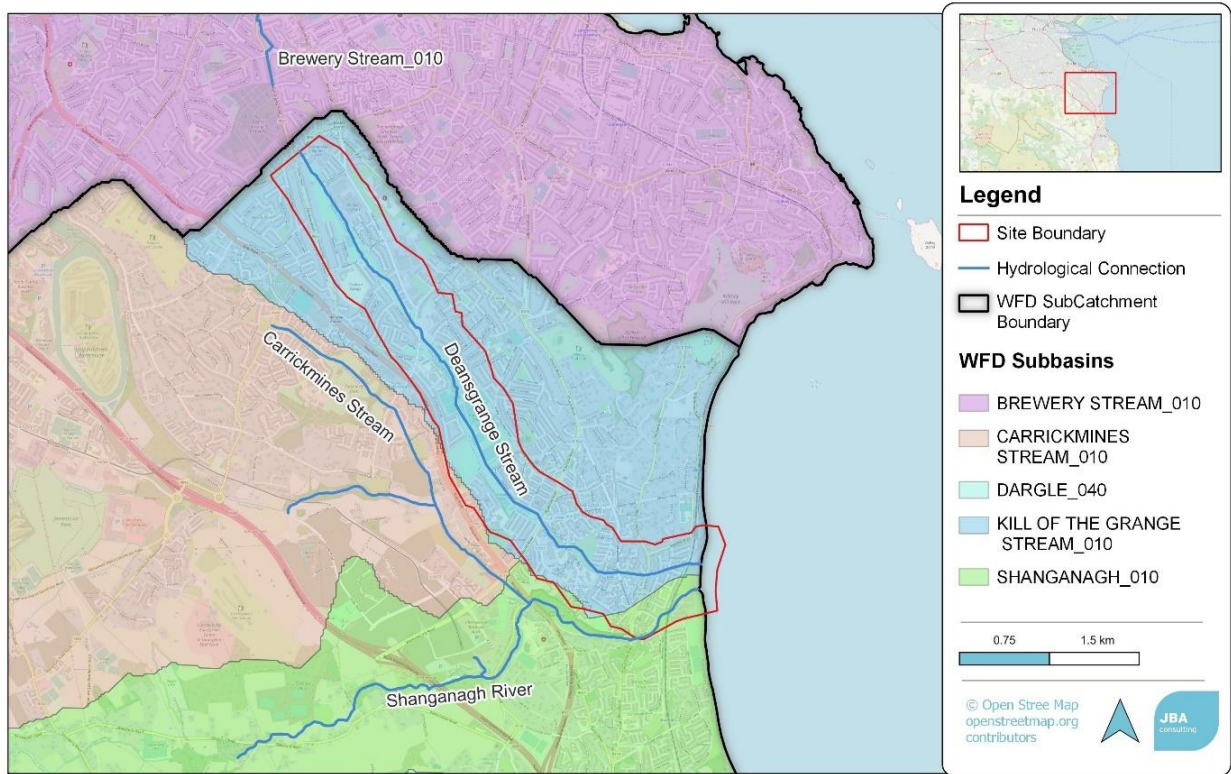


Figure 3-1: Waterbodies within the vicinity of the proposed site (OSM, 2023).

3.3 Groundwater

The majority of the site occurs within the Wicklow (IE_EA_G_076) groundwater body. However a small section occurs in the Industrial Facility (P0019-02) (IE_EA_G_091) groundwater body, and a small section of this site along the southeast of the site boundary is within the Kilcullen (IE_EA_G_003) groundwater body. The WFD status and current risk of these groundwater bodies are listed in Table 3-3 (EPA 2022).

The bedrock of a large part of the site is granite with microcline phenocrysts, with a small section in the centre consisting of fine-grained granodiorite to granite, and the section between Loughlinstown and the coast being made of dark blue-grey slate, phyllite and schist, with a fault running along the coast within this rock bed. The site is dominated by Made/Built land, with sections of tills derived from limestone in areas of the site. The site has a range of coefficients, most of the site has a recharge coefficient of 20%, while the build up areas around Loughlinstown had a recharge rate of 7.5%, and a high recharge rate along the coast, which is reflected in the overall low vulnerability of the aquifers on site, and the high vulnerability in the east of the site (Figure 3-2).

The site is split between two types of aquifer. Most of the site is "Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones", an aquifer with poor connections and a low permeability, low storage, short flow paths, and a very restricted discharge to streams. The site also contains a small area of "Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones" Vulnerability which also has poor connections, low permeability, discharge restricted to a few hundreds of metres and general restricted groundwater discharge to streams.

Table 3-2: WFD Groundbodies Risks and Status in the vicinity of the site

WFD Ground waterbody	WFD Status	WDF Risk
Wicklow	Good	Under Review
Kilcullen	Good	At Risk
Industrial Facility (P0019-12)	Poor	At Risk

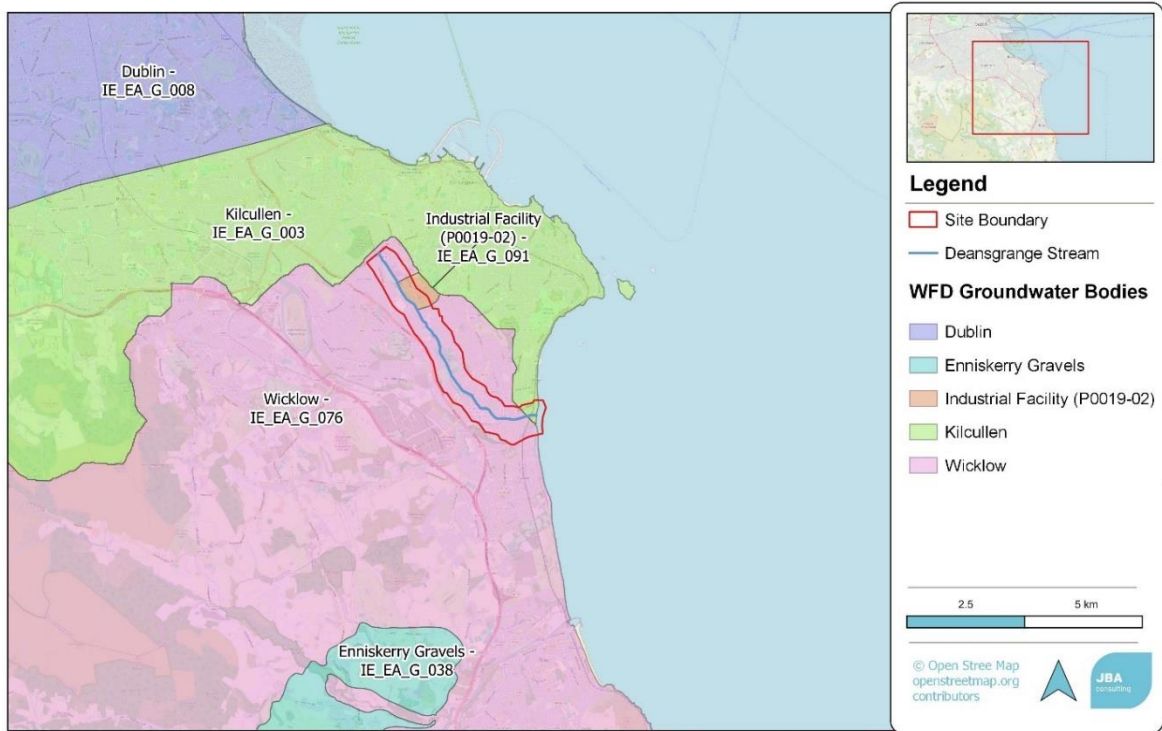


Figure 3-2: Groundwater bodies of the site location (OSM, 2023).

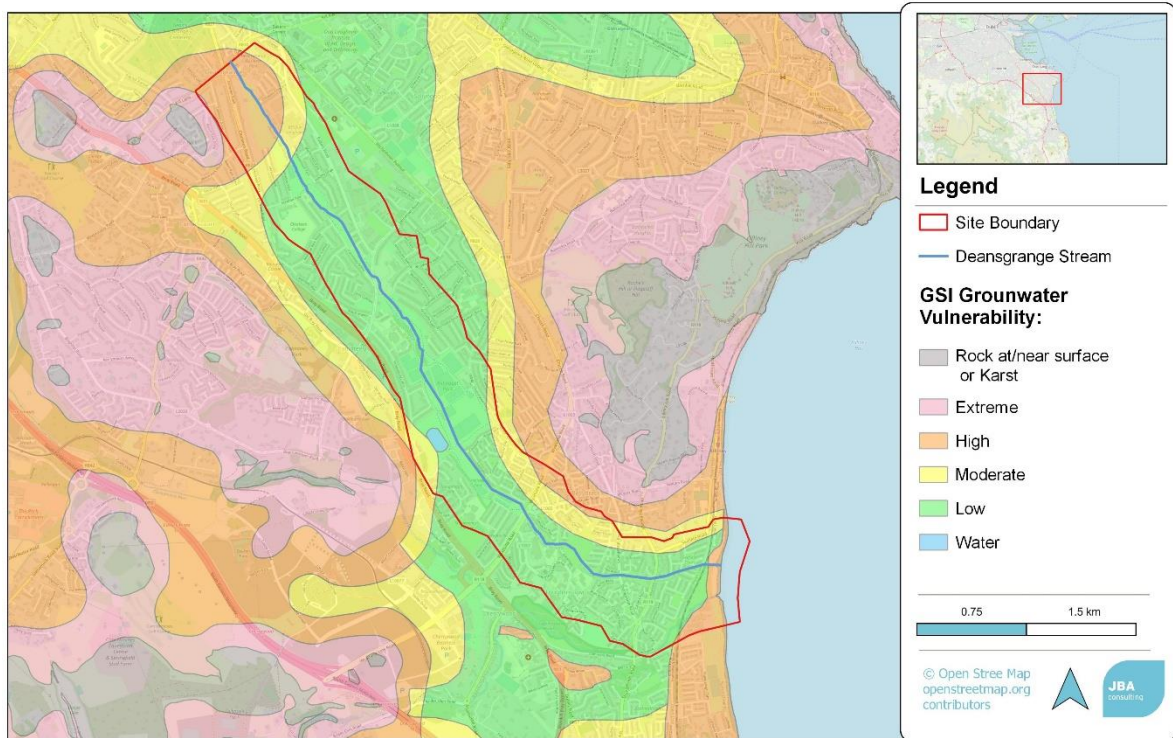


Figure 3-3: Aquifer vulnerability of the site (OSM, 2023)

3.4 Habitats

The habitats recorded on site are listed in Table 3-3 and overview map is shown in Figure 3-2. The site area is then broken down into a series of habitat maps (A-G) found in Appendix A

Table 3-3: List of habitats recorded on site

Habitat	Fossitt Code	Link to Potential Annex I Habitat
Buildings and artificial surfaces	BL3	
Buildings and artificial surfaces/ Amenity grassland mosaic - Houses and gardens	BL3/GA2	
Shingle and gravel banks	CB1	<i>Perennial vegetation on stony banks [1220]</i>
Other artificial lakes and ponds	FL8	
Reed and large sedge swamps	FS1	
Reed and large sedge swamps/ Tall-herb swamps mosaic	FS1,FS2	
Depositing/lowland rivers	FW2	
Amenity grassland (improved)	GA2	
Dry meadows and grassy verges	GS2	
Shingle and gravel shores	LS1	<i>Annual vegetation of drift lines [1210]</i>
(Mixed) broadleaved woodland	WD1	
Scattered trees and parkland	WD5	
Riparian Woodland	WN5	
Hedgerows	WL1	
Treelines	WL2	
Scrub	WS1	

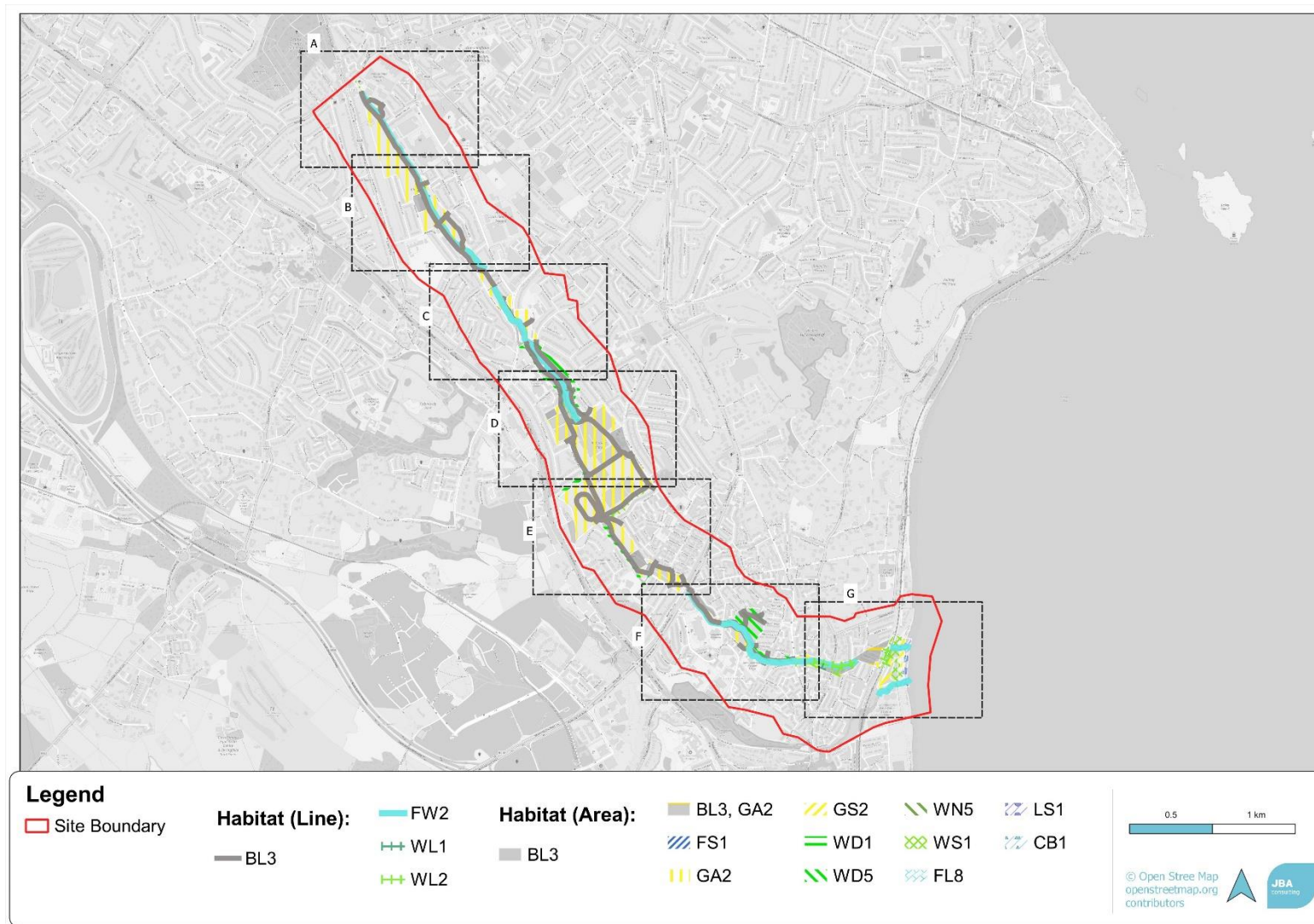


Figure 3-4: Overview of habitats, map subsets A-G found in Appendix A

3.4.1 Buildings and artificial surfaces - BL3

Buildings and artificial surfaces include surrounding residential houses, a tennis club at the centre of the park and footpath within the parks.

3.4.2 Buildings and artificial surfaces/ Amenity grassland mosaic - Houses and gardens (BL3/GA2)

This includes the residential houses and their gardens towards the lower reaches of the Deansgrange Stream. In the context of this site and the lands immediately adjacent

3.4.3 Shingle and gravel banks - CB1

The dry meadow section along the coast begins to transition into a shingle and gravel bank as it approaches the waterfront. Within this area, include the species Sea Rocket *Cakile maritima*, Babington Orache *Atriplex glabriuscula*, Annual Sea-blite *Suaeda maritima*, Sea Mayweed *Tripleurospermum maritima*, Sea-holly *Eryngium maritimum*, Wild Radish *Raphanus raphanistrum* ssp *raphanistrum*, Sea Spurge *Euphorbia paralis* and Sea Sandwort.



Figure 3-5: Dry meadow habitat grading into shingle and gravel banks habitats, with LS1 gravel short in the background

3.4.4 Other artificial lakes and ponds - FL8

There are a number of artificial ponds in Clonkeen Park for surface water attenuation (Figure 3-6) Vegetation fringing the ponds include Willowherb *Epilobium* spp, Bulrush *Typha latifolia*, Pendulous Sedge *Carex pendula*, Purple Loosestrife *Lythrum salicaria*, Willow *Salix* spp, Dock *Rumex* spp, Soft Rush *Juncus effusus*, Hard Rush *Juncus inflexus*, Sharp rush *Juncus acutus* and Meadowsweet *Filipendula ulmaria*. These ponds add variety and habitat for waterbirds, e.g. Moorhen was recorded during the site visit and Amphibians such as Smooth Newt *Lissotriton vulgaris* and Common Frog *Rana temporaria*.



Figure 3-6: Artificial pond in the north end of Clonkeen Park.

3.4.5 Reed and large sedge swamps (FS1)

This habitat was found at the outfalls of the Deansgrange Stream and Shanganagh River where they both enter into Killiney bay. Both habitats are dominated by Common Reed *Phragmites australis* (Figure 3-7)



Figure 3-7: Common Reed dominating Reed habitat (FS1)

3.4.6 Reed and large sedge swamps / Tall-herb swamps - FS1/FS2

A continuous reed and large sedge swamp / tall-herb swamp is present along the banks of the Deansgrange Stream throughout Loughlinstown Park. Plant species along the banks include Water-cress *Nasturtium officinale*, Bramble *Rubus fruticosus* agg., Nettle *Urtica dioica*, Cleavers *Galium aparine*, Willowherb, Sycamore *Acer pseudoplanatus*, Dock., Bulrush, Weeping Willow *Salix babylonica*, Yellow Iris *Iris pseudacorus*, Bur-reed *Sparganium* spp., Alder *Alnus glutinosa*, Common Reed *Phragmites australis*, Starwort *Callitriche* spp., Butterfly-bush *Buddleja davidii*, Cherry Laurel *Prunus laurocerasus* and Winter Heliotrope *Petasites pyrenaicus*.

The bird species present in this area include Grey Wagtail, Moorhen *Gallinula chloropus*, Mallard *Anas platyrhynchos*, Blackhead Gull *Larus ridibundus*, Teal *Anas crecca*, Robin *Erithacus rubecula*, Goldfinch *Carduelis carduelis*, Blackbird and Grey Heron *Ardea cinera*.

3.4.7 Depositing/lowland rivers FW2

The Deansgrange Stream (also known as Kill of the Grange Stream) is a depositing/lowland stream which passes through the various parks in a north-west to south-east direction (Figure 3-8). The stream is straightened and the downstream section in Clonkeen Park has a concreted bottom and banks before it is culverted under Johnstown Road. The substrate is silty with some cobbles. Vegetation along the banks include Alexanders *Smyrniolum olusatrum*, Nettle, Vetches *Vicia* spp., Bramble, Dock, Hazel *Corylus avellana*, Willowherb, Rushes *Juncus* spp., with some areas colonised by invasive species Winter Heliotrope and Cherry Laurel., Instream vegetation includes Fool's-water-cress *Apium nodiflorum*, Water Crowfoot *Ranunculululs* spp., Water-cress, Starwort as well as the invasive Canadian Pondweed *Elodea canadensis*.



Figure 3-8: Scrub along the depositing/lowland stream, in the north of Clonkeen Park.

3.4.8 Amenity grassland (improved) (GA2)

Most of the areas in Clonkeen Park, Kilboggot Park, and Glenavon Park consist of open amenity grassland which is managed and regularly mown. Within the mown grassy areas include the species

Perennial Ryegrass *Lolium perenne*, Nettle, Dandelion *Taraxacum* spp. and Creeping Buttercup *Ranunculus repens*.

Bird species witnessed within the amenity grassland include Wren *Troglodytes troglodytes*, Grey wagtail *Motacilla cinerea*, Pied wagtail *Motacilla alba yarrelli* and Blackbird *Turdus merula*

3.4.9 Dry meadow and grass verge - GS2

There are dry meadows located near the coastline, east of the railway line. The edges of the habitat begin to merge into sections of Shingle. The plant species encountered in this area include Sea Sandwort, Yarrow *Achillea millefolium*, Ribwort Plantain *Plantago lanceolata*, Sea Radish *Raphanus raphanistrum* subs. *maritimus*, Burnet-saxifrage *Pimpinella saxifrage*, Sea Beet *Beta vulgaris* ssp. *maritima*, Wild Carrot *Daucus carota*, Lady's Bedstraw *Galium verum* and Red Fescue *Festuca rubra*.

An area of amenity grassland east of the proposed overflow culvert has been left to grow into a dry meadow (Figure 3-9) with grass species such as Yorkshire Fog *Holcus lanatus*, Perennial Ryegrass, Cocksfoot *Dactylis glomerata*, Crested Dogs-tail *Cynosurus cristatus* and False oat-grass *Arrhenatherum elatius*. Red Clover *Trifolium pratense* and White Clover *Trifolium repens* were also both abundant. There was frequent presence of Meadow Buttercup *Ranunculus acris*, Hogweed *Heracleum sphondylium*, Silverweed *Potentilla anserina*, Daisy *Bellis perennis* and Dandelions *Taraxacum* sp., with patches of Black Medic *Medicago lupulina* and some small amounts of Cuckoo Flower *Cardamine pratensis*, Ragwort *Jacobaea vulgaris* and Dock *Rumex* sp. Pollinators were abundant in this habitat. The proposed culvert will not run through this patch of meadow.



Figure 3-9: Dry Meadow (GS2) to the east of the proposed Seafield overflow culvert.

3.4.10 Shingle and gravel shore - LS1

The shingle and gravel banks grade into this shingle shore habitat goes down to the waters edge. Some Sea Spurge and Sea Sandwort is found on the upper limits of the shore, however the majority of the beach in this section is made up of shingle.

This habitat may correspond with the Annex I habitat *Annual vegetation of drift lines* [1210]

3.4.11 (Mixed) broadleaved woodland (WD1)

A linear mixed broadleaved woodland occurs along the north boundary of Clonkeen Park and the Deansgrange Business Park, adjacent to the stream. Plant species include Poplar *Populus* spp, Willow, Alder, Hazel and Beech *Fagus sylvatica*. The understory consists of Bramble, Willowherb, Nettle, Lords-and-ladies *Arum maculatum* and Pendulous Sedge.

Bird species present include Wren, Magpie *Pica pica*, Hooded crow *Corvus corone*, Grey wagtail, Little egret *Egretta garzetta*, meanwhile there were Rat *Rattus* spp. holes along the bank.

Further south, in Clonkeen Park, there are pockets of mixed woodland present which include plant species present include Passion Flower *Passiflora* spp., Plum *Prunus* spp., Tuja *Cupressaceae*, Birch *Betula* spp., *Eucalyptus*, Cherry Laurel, Winter Heliotrop, Sycamore and some garden escapees, Daffodils *Narcissus* spp, Bluebells *Hyacinthoides non-scripta*, Lords-and-ladies, Ivy *Hedera hibernica*, Cleavers, and Vetches *Vicia* spp.

Tree species in these areas include Poplar, Hazel, Beech, Willow., *Eucalyptus* spp., Alder, *Cotoneaster* spp. In the far east of the site, along the railway, there is a grassy area containing Elm *Ulmus procera*.

The invertebrates in this location include Bumblebee *Bombus* spp. Parts of this location were also identified as a potential area for bat roosting and for breeding birds.

3.4.12 WD5 - Scattered Trees and Parkland

Scattered trees and parks are located within in the northern section of Kilboggot Park in the centre of the site, and further to the southeast in an open area near Glenavon Park and Ballybrack. The habitat in Ballybrack is present on both sides of the bank, one of which being a small stand, the other being 10m wide. Plant species in these areas include Ash *Fraxinus excelsior*, Oak *Quercus* spp, Sycamore, Beech, Hawthorn *Crataegus monogyna*, Butterfly-bush and Japanese Knotweed *Fallopia japonica*, while some of the Oak trees have hollows that have been identified for potential bat roosting. There are small areas of scattered trees to the west of the railway line among the amenity grass, which contain the tree species Sycamore, Bird Cherry *Prunus padus*, Lime *Tilia cordata x platyphyllos* and Oak.

The bird Chaffinch *Fringilla coelebs* was also recorded in these areas of scattered trees.

3.4.13 Riparian Woodland (WN5)

An area of Riparian woodland is found along the Shanganagh River upstream of the bridge upon which an access bailey bridge will be placed for the period construction. This riparian woodland contains Willow, Sycamore, Creeping Buttercup, Nettle, Cleavers, Cow Parsley, Common Reed, Reed Canary-grass *Phalaris arundinaceae*, Rosebay Willowherb *Epilobium angustifolium*, Hogweed, Nipplewort *Lapsana communis* and the INNS Giant Hogweed *Heracleum mantegazzianum* (Figure 3-10).



Figure 3-10: Giant Hogweed on the right-hand bank of the Shanganagh River, 20m upstream of the embankment pathway bridge.

3.4.14 Hedgerow (WL1)

In the central area of the Clonkeen Park (Figure 3-11), there is a hedgerow with Hawthorn , Bramble, Ivy, Alexanders. Woodpigeon were noted in the hedgerow.



Figure 3-11: Amenity grassland to the left of the stream and hedgerow to the right in the centre of Clonkeen Park.

3.4.15 Treeline WL2

Treelines are present throughout all the parks and contain Poplar, Willow, Hazel and Beech. The bird species Mallard was also recorded among the tree line adjacent to the river.

3.4.16 Scrub (WS1)

There is a small area of scrub in the north end of Clonkeen Park including plant species such as Dogwood *Cornus sanguinea*, Apple *Malus* spp., Bramble, Ivy, Alexanders, Privet *Ligustrum vulgare*, Willow, Nettle, Birch, Lesser Celandine *Ficaria verna* and Hazel.

Invasive plants Traveller's Joy *Clematis vitalba*, Himalayan Knotweed *Persicaria wallichii* and Butterfly-bush were recorded here. Himalayan Knotweed is listed on the Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011.

Bird species recorded here include Goldfinch, Long-tailed Tit *Aegithalos caudatus*, Starling *Sturnus vulgaris*, Blackbird, Wren and Woodpigeon *Columba palumbus*.

This habitat is considered to be of **high local ecological value** given its capacity to provide refuge for local fauna and nesting opportunities for breeding birds; as well as acting as a wildlife corridor.

3.4.17 Scrub/Treeline Mosaic (WS1/WL2)

A short section of scrub/treeline is present along the banks of Deansgrange Stream, southeast of Ashlawn Park. Within this area are Ash, Bramble, Ivy, Elder *Sambucus nigra*, Hart's tongue *Asplenium scolopendrium*, Sycamore, Pine trees *Pinus* spp., Three-cornered garlic *Allium triquetrum*. The bird species recorded here included House Sparrow *Passer domesticus*.

This habitat is considered to be of **high local ecological value** given its capacity to provide refuge for local fauna and nesting opportunities for breeding birds; as well as acting as a wildlife corridor.

3.4.18 Treeline (WL2)

Treelines are present throughout all the parks and contain Poplar, Willow, Hazel and Beech. The bird species Mallard was also recorded among the tree line adjacent to the river.

3.5 Invasive Non-native Species

A total of eight invasive non-native species were recorded within Clonkeen Park, namely: Three-cornered Garlic *Allium triquetum*, Sycamore *Acer pseudoplatanus*, Canadian Waterweed *Elodea canadensis*, Winter Heliotrope *Petasites pyrenaicus*, Cherry Laurel *Prunus laurocerasus*, Butterfly-bush *Buddleja davidii*, Himalayan Knotweed *Persicaria wallichii*, Japanese Knotweed *Fallopia japonica* and Traveller's Joy *Clematis vitalba*.

Cherry Laurel, Japanese Knotweed and Canadian Waterweed are listed on the Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/201 and are all High Impact. Canadian Waterweed is considered naturalised and it is not typically considered necessary to control it.

4 Natura 2000 Sites

The DEHLG (2009) guidance identifies that Screening for Appropriate Assessment of a plan or project should consider the following Natura 2000 sites:

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of impact of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any Natura 2000 sites that are more than 15km from the plan or project area, but may potentially be impacted upon, for example, through a hydrological connection.

As the scale of proposed works are considered of 'Project' status, Natura 2000 sites within a 5km range of the proposed development were examined, and an extended 15km range for those with a downstream hydrological connection on the basis that there were no source-pathway-receptors identified outside these ranges, however there are no Natura 2000 sites outside the immediate 5km Zol that have would also have any hydrological connections to the proposed works. The Natura 2000 sites within the range are listed in Table 4-1 below and their location are shown in Figure 4-1 (overleaf).

Table 4-1: Natura 2000 sites located within the 5km Zone of Influence (Zol) of the proposed development.

Natura 2000 site	Site Code	Approximate direct distance from site	Approximate hydrological distance from site
South Dublin Bay and River Tolka Estuary SPA	004024	1.8km	9.1km
South Dublin Bay SAC	000210	1.8km	7.2km
Dalkey Islands SPA	004172	2.6km	2.6km
Rockabill to Dalkey Island SAC	003000	1.3km	1.3km
Ballyman Glen SAC	000713	4.8km	na

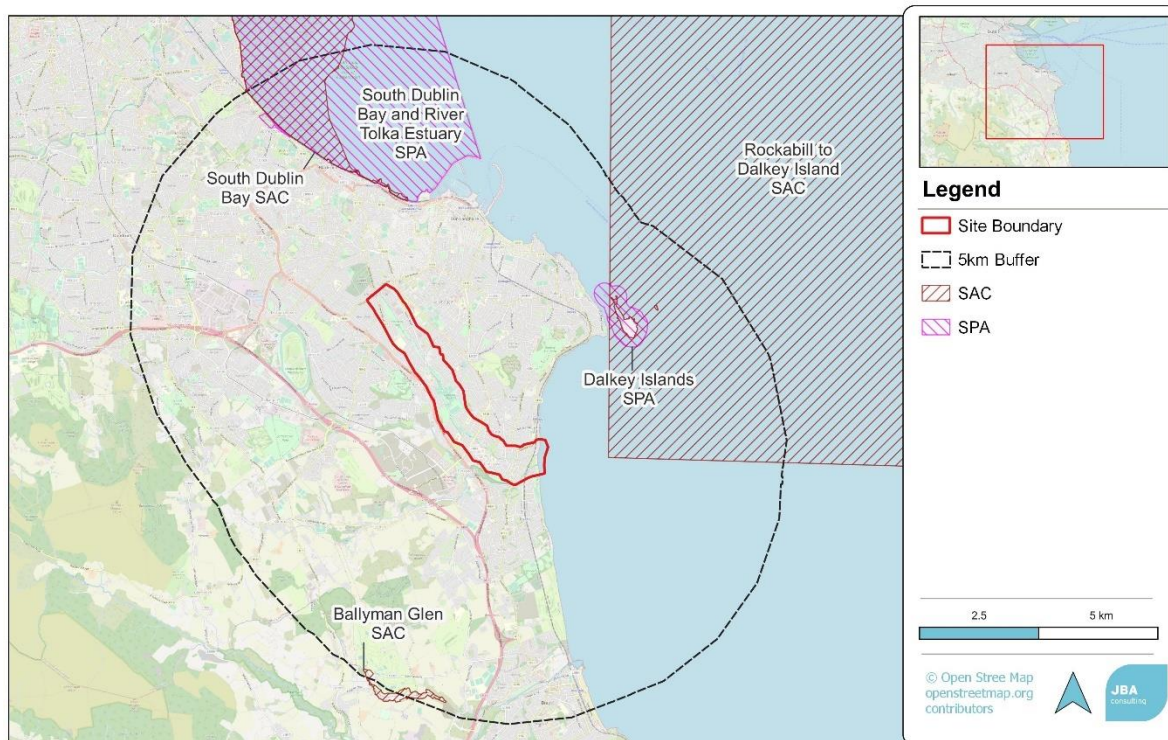


Figure 4-1: Natura 2000 sites and site location (OSM, 2023).

All other Natura 2000 sites are not anticipated to be impacted due to either distance or absence of pathway (i.e. no hydrological connection) between the development site and the receiving environment. The descriptions of the Natura 2000 sites within the Zol are given in Table 4-2 (overleaf).

Table 4-2: Site briefs; Qualifying Interests; and project-relevant threats /pressures and their impacts and sources in relation to the Natura 2000 sites within the 5km Zol (plus hydrological connectivity extension).

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
South Dublin Bay and River Tolka Estuary SPA (004024)	This designated site comprises a substantial part of Dublin Bay. It includes virtually all of the intertidal area in the south bay, as well as much of the Tolka Estuary to the north of the River Liffey. The site possesses extensive intertidal flats which support wintering waterfowl which are part of the overall Dublin Bay population. It regularly has an internationally important population of Brent Geese, which feeds on Dwarf Eelgrass in the autumn. It has nationally important numbers of a further 6 species including: Oystercatcher <i>aematopus ostralegus</i> , Ringed Plover <i>Charadrius hiaticula</i> , Red Knot <i>Calidris canutus</i> , Sanderling <i>Calidris alba</i> , Dunlin <i>Calidris alpina</i> and Bar-tailed Godwit <i>Limosa lapponica</i> . It is an important site for wintering gulls, especially Black-headed Gull <i>Chroicocephalus ridibundus</i> and Common Gull <i>Larus canus</i> . South Dublin Bay is the premier site in Ireland for Mediterranean Gull <i>Larus melanocephalus</i> , with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including Roseate Terns <i>Sterna dougallii</i> , Common Tern <i>Sterna hirundo</i> and Artic Tern <i>Sterna paradisaea</i> (NPWS, 2015b).	<ul style="list-style-type: none"> - Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046] - Oystercatcher <i>Haematopus ostralegus</i> [A130] - Ringed Plover <i>Charadrius hiaticula</i> [A137] - Grey Plover <i>Pluvialis squatarola</i> [A141] - Red Knot <i>Calidris canutus</i> [A143] - Sanderling <i>Calidris alba</i> [A144] - Dunlin <i>Calidris alpina</i> [A149] - Bar-tailed Godwit <i>Limosa lapponica</i> [A157] - Redshank <i>Tringa totanus</i> [A162] - Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] - Roseate Tern <i>Sterna dougallii</i> [A192] - Common Tern <i>Sterna hirundo</i> [A193] - Arctic Tern <i>Sterna paradisaea</i> [A194] - Wetland and Waterbirds [A999] (NPWS, 2015b)	Discharges: High Impact (inside) (Full list of threats / pressures - EEA, 2021))
South Dublin Bay SAC	This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5km.	- Mudflats and sandflats not covered by seawater at low tide	Discharges: Moderate Impact (both)

(000210)	<p>The seaward boundary is marked by the low tide mark, while the landward boundary is now almost entirely artificially embanked. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. The designated site possesses a fine and fairly extensive example of intertidal flats. Sediment type is predominantly sand, with muddy sands in the more sheltered areas. A typical macro-invertebrate faunal assemblage exists within the SAC. The SAC has the largest stand of Dwarf Eelgrass <i>Zostera noltii</i> on the east coast. It also supports part of the important wintering waterfowl populations of Dublin Bay (NPWS, 2015c)</p>	<p>[1140] - Annual vegetation of drift lines [1210] - Salicornia and other annuals colonising mud and sand [1310] - Embryonic shifting dunes [2110] (NPWS, 2013b)</p>	<p>Accumulation of organic material: High Impact (inside) (Full list of threats / pressures - EEA, 2020b))</p>
<p>Rockabill to Dalkey Island SAC (003000)</p>	<p>The selected site forms a strip of dynamic inshore and coastal waters in the western Irish Sea, extending approximately 40 km in length and encompassing a range of comparatively shallow marine habitats, including diverse seabed structures, reefs, islets and islands. The area selected for designation represents a key habitat for the Annex II species - harbour porpoise, within the Irish Sea. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves) are observed at favourable, typical reference values for the species. The selected site contains a wide array of habitats believed to be important for harbour porpoise including inshore shallow sand and mud-banks and rocky reefs scoured by strong current flow. The site also contains two Annex II seal species – Harbour seal <i>Phoca vitulina vitulina</i>, Grey seal <i>Halichoerus grypus</i> for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenose dolphin <i>Tursiops truncatus</i> has also occasionally been recorded in the area. Along the eastern seaboard the habitat type Reef is uncommon due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. These Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter</p>	<p>- Reefs [1170] - <i>Phocoena phocoena</i> Harbour Porpoise [1351]</p>	<p>Discharges: High Impact (outside) Siltation rate changes, dumping, depositing of dredged deposits: Low Impact (outside) (Full list of threats / pressures - EEA, 2019b)</p>

	feeding fauna such as sponges, anemones and echinoderms. (NPWS, 2014)		
Dalkey Islands SPA (004172)	The site comprises Dalkey Island, Lamb Island, Maiden Rock, the intervening rocks and reefs between Dalkey Island, Lamb Island and Clare Rock, and the sea area around Maiden Rock to a distance of 100 m. The site is of importance for both breeding and staging <i>Sterna</i> terns. There is a well-established colony of <i>Sterna hirundo</i> and smaller numbers of <i>Sterna paradisaea</i> . <i>Sterna dougallii</i> bred in 2003 and 2004, one of only three known sites in the country - this came about after several years of conservation management aimed at attracting the species. The site along with other parts of south Dublin Bay is used by the three <i>Sterna</i> tern species as a major post-breeding/pre-migration autumn roost area. (NPWS, 2015a)	<ul style="list-style-type: none"> - Roseate Tern <i>Sterna dougallii</i> [A192] - Common Tern <i>Sterna hirundo</i> [A193] - Arctic Tern <i>Sterna paradisaea</i> [A194] 	<p>N/A</p> <p>(Full list of threats / pressures - EEA, 2020a)</p>
Ballyman Glen SAC (000713)	This site is situated approximately 3km north of Enniskerry and is along the border of Dublin and Wicklow, oriented from the east to west with a stream running through the centre. The Glen contains a strip of alkaline fen which is associated with petrifying spring/seepage areas that have thick deposits of marl. The site is notable for orchids and twenty species of sedge. Wet woodland and scrub occurs along the margins of the stream for most of the length of the glen, extending outwards that creates inaccessible and species-rich patches of woodland with a dense shrub layer. Wetter areas of the stream, particular the western end of the site, contain marshes. The steeper, southern slopes of the glen has an area of broadleaved woodland (NPWS 2013).	<ul style="list-style-type: none"> -Petrifying springs with tufa formation (Cratoneurion) [7220] -Alkaline fens [7230] 	<p>Continuous urbanisation: High Impact (outside)</p> <p>Discontinuous urbanisation Moderate Impact (outside)</p> <p>(Full list of threats/pressures EEA, 2019a)</p>

5 Other Relevant Plans and Projects

5.1 Cumulative Effects

As part of the Screening for an Appropriate Assessment, in addition to the proposed works, other relevant projects and plans in the region that may induce cumulative impacts must also be considered at this stage

5.1.1 Dún Laoghaire Rathdown County Development Plan 2022-2028

The County Development Plan (DLRCC, 2022a) has a vision and policy statement that aims to continue to facilitate appropriate levels of sustainable development predicated on the delivery of high quality community, employment and recreational environments - allied to the promotion of sustainable transportation and travel patterns - all the while protecting Dún Laoghaire–Rathdown’s unique landscape, natural heritage and physical fabric, to ensure the needs of those living and working in the County can thrive in a socially, economically, environmentally sustainable and equitable manner.

An Appropriate Assessment Screening and an Appropriate Assessment Natura Impact Statement (NIS) was carried out on the plan. This concluded that there are no likely significant direct, indirect or secondary impacts of the project on any Natura 2000 sites (DLRCC, 2022b).

Overall, the Dún Laoghaire Rathdown Council Development Plan 2022-2028 is not considered to adversely impact any Natura 2000 site, nor is it expected to contribute to any cumulative or in-combination effects.

5.1.2 Greater Dublin Drainage Strategy

The Greater Dublin Drainage Strategy sets out the strategic planning for the development of waste water treatment in the Greater Dublin area in relation to the Ringsend WWTP Upgrade, Greater Dublin Drainage Project and associated wastewater network drainage projects (Irish Water, 2018). The Ringsend WWTP Upgrade includes plans to expand the WWTP to its ultimate capacity, together with associated network upgrades required. The Greater Dublin Drainage Project is planned to relieve both the Ringsend WWTP and network loading by construction of a new WWTP at Clonsaugh, an orbital sewer and provision of an outfall pipe discharging 1km north-east of Ireland’s Eye. The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by Q1 2020 and the ultimate capacity of 2.4 million PE to be in operation by 2024 (Irish Water, 2018). The Greater Dublin Drainage Project is strategically important to the Dublin Region in that it will provide capacity for residential and commercial growth (Irish Water, 2018).

Overall, the Greater Dublin Drainage Strategy is not considered to adversely impact any Natura 2000 site, nor is it expected to contribute to any cumulative or in-combination effects.

5.1.3 River Basin Management Plan for Ireland 2018-2021 / 2022-2027

The 2nd cycle River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve ‘good’ ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG, 2018a). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The first cycle of River Basin Management Plans included the Eastern River Basin District - River Basin Management Plan 2009 – 2015 (WFD, 2010). The plans summarised the waterbodies that may not meet the environmental objectives of the WFD by 2015 and identified which pressures are contributing to the environmental objectives not being achieved. The plans described the classification results and identified measures that can be introduced in order to safeguard waters and meet the environmental objectives of the WFD;

- Prevent deterioration of water body status.
- Restore good status to water bodies.
- Achieve protected areas objectives.

- Reduce chemical pollution of water bodies

The River Basin Management Plan for Ireland (2018-2021) outlines the new approach that Ireland will take to protect our waters over the period to 2021. It builds on lessons learned from the first planning cycle in a number of areas:

- stronger and more effective delivery structures have been put in place to build the foundations and momentum for long-term improvements to water quality
- a new governance structure, which brings the policy, technical and implementation actors together with public and representative organisations. This will ensure the effective and coordinated delivery of measures.

Ireland's third River Basin Management Plan 2022-2027 (EPA 2021) was out for public consultation until March 31st 2022. The Consultation report was published in July 2022. Following review of the submissions, the DHLGH will commence a review and where necessary update the draft RBMP with a view to finalisation and publication in Q3/Q4 of 2022.

The 3rd cycle draft Catchment Reports were published in August 2021. The draft Catchment Reports provides a summary of the water quality assessment outcomes for respective catchments, including status and risk categories, significant threats and pressures, details on protected areas and a comparison between cycle 2 and cycle 3.

The third cycle draft Catchment Report for Ovoca-Vartry Bay Catchment (EPA, 2021) identified that between Cycles 2 and 3 there has been an overall slight improvement in the catchment's status. The overall change in quality between Cycles 2 and 3 include an increase in three waterbodies achieving a High Status, however there was also an increase in one waterbody that achieved a Bad status. The number of waterbodies which are achieving a Good and Poor statuses remains unchanged between Cycles, while there is a reduction of waterbodies achieving a moderate status by three. There remains to be eighteen waterbodies that are unassigned.

The Third Cycle River Basin Management Plan for Ireland 2022-2027 is not anticipated to contribute to cumulative or in-combination effects.

5.2 Other Projects

Since September 2019, the projects listed overleaf (Table 5-1), which are not retention applications, home extensions and/or internal alterations, have been granted planning permission in the locality of the proposed site.

Table 5-1: Projects granted planning permission since September 2019 in vicinity of proposed site.

Planning Reference	Address	Application Status	Decision date	Summary of development
D22A/0451 / ABP Ref. 314620	Cromlech Cottage, Killiney Hill Road, Killiney, Co. Dublin	REFUSE PERMISSION, appealed to An Bord Pleanála	18-Aug-2022, ABP decision due 26-01-2023	The development will consist of the demolition of existing structures on site, including a habitable dwelling; The construction of 3-storey terrace of units consisting of 7 No. 3-bed houses with car garage, bike storage at the ground floor and habitable spaces to the first and second floor with access to the development from Killiney Hill Road; All with associated site works, surface carparking, bin storage, signage, open spaces, landscaping, and boundary treatments.
D19A/0797	Lands at Loughlinstown Drive (0.5685ha), Loughlinstown, Co. Dublin comprising Loughlinstown Industrial Estate and part of HSE Health Centre	GRANT PERMISSION	28/07/2020	Permission for development. The development will consist of the demolition of all existing buildings (1985sq.m) on site and the construction of a 4 storey Primary Care Centre and General Practitioner (GP) Surgery with a gross floor area of 4,267sq.m. The accommodation will consist of treatment rooms, consultation rooms, meeting rooms, staff facilities, ancillary offices and ancillary accommodation over 4 floors, with a maximum height of 16.955m. The building also includes an own door pharmacy (101sq.m) at ground floor. Permission is also sought for an ESB substation and switch room (35sq.m), bin store (19sq.m), a vehicular drop off area the main building entrance, 61 no. surface carparking spaces, 4 no. Motorcycle parking spaces, landscaping, lighting, external signage and all associated site and development works. Vehicular access/egress to the proposed development is via two points off Loughlinstown drive (one existing access to be retained and one proposed access point).
DZ19A/0863	Site is generally bounded by Lehaunstown Lane to the west, Carrickmines Stream (partly) to the south and, Cabinteely Stream (partly) to the east and is located within the townland of, Brennanstown,	GRANT PERMISSION	14/01/2020	Permission for a residential development at a site measuring approximately 8.24 ha in area. The development will consist of the construction of 342 new residential dwellings, comprising 189 no. apartments arranged in 4 blocks (all 4-storeys in height and comprising 15 x 1 bed units and 174 x 2 bed units); 28 No. duplex units (comprising 14 x 2 bed units and 14 x 3 bed units); 60 No. triplex units (comprising 40 x 2 bed units and 20 x 3 bed units) and 65 No. 4 bedroom houses (comprising a mix of detached, semi-detached and terraced house types) together with a Childcare Facility at ground floor level within Block C with a floor space of 249sq.m. (GFA), and ancillary open space. The proposed development includes for all associated infrastructural works to include the part delivery of the Cherrywood SDZ Planning Scheme's Druid's Glen Distributor Road (also known as Q to P3), measuring approximately 390 m in length to include the construction / completion of the part approved 3-span bridge (Option 1) over the Cabinteely Stream under Planning Ref. DZ16A/0587 (ABP Ref. PL06D.247915). It is noted that a portion of Road Q to P3 was also granted under Planning Ref. D15A/0385 (as amended by DZ19A/0622) and the road may be constructed under that permission. Permission is sought for the inclusion and utilisation of a temporary haul road (to be constructed by the Dún Laoghaire-Rathdown County Council Contractor as part of the Druid's Glen Road Q - P3 east of the Cabinteely Stream (up to a point CH 100m as defined on ATKINS Drawing No. 0101A). This temporary haul route would connect directly to the N11 via the proposed

Planning Reference	Address	Application Status	Decision date	Summary of development
	Dublin 18			Junction Q and includes for a culvert, or temporary bridge crossing at the Cabinteely Stream. The proposed temporary haul route comprises a 4m wide unbound haul road approximately 160m long, and will be constructed from approximately CH 560m on Druid's Glen Road to a proposed site compound area to the west thereof measuring approximately 30m wide and up to 45m long in plan area and will be situated at, or above the 30m site contour. This site compound will be made available to the Dún Laoghaire-Rathdown County Council Contractor building the Druid's Glen Road from N11 to point P3. Following the sectional completion of Druid's Glen Road, the proposed temporary haul road will be available to accommodate construction traffic associated with the appointed contractor(s) responsible for the development of the subject lands (as per any planning permission granted). It is proposed that this temporary haul route would remain available until the permanent bridge crossing the Cabinteely Steam becomes operational. The development will also include the construction of: ancillary waste storage facilities; ancillary waste recycling collection area; associated car parking (total of 565 no. car parking spaces, comprising 257 spaces at basement level and 308 surface level spaces (including 9 no. ancillary car parking spaces in connection with the childcare facility); bicycle parking spaces (total of 492 no. cycle parking spaces, comprising 156 basement level spaces and 336 surface level spaces); a number of ancillary public open spaces; provision of boundary treatments; lighting; associated hard and soft landscaping (including changes in site levels and playground provision); associated infrastructural and site development works above and below ground (including 2 No. permanent water attenuation ponds and 1 no. temporary attenuation pond). The application site is located within the Cherrywood Strategic Development Zone.
D19A/0773	Side of 96 Beech Grove Cottages, Loughlinstown, Co Dublin	GRANT PERMISSION	24/01/2019	Permission for 3 bedroom detached bungalow and all associated site works.

5.3 Summary

The developments permitted above have the potential to have overlapping construction and short-term residual impact phases with the proposed development and therefore, in the absence of mitigation measures, these developments may result in potential in-combination or cumulative impacts given their proximity to the local Natura 2000 sites.

The County and Local Development Plan; RBMP and projects within the locality of the proposed project are considered in combination with the currently proposed project in the Screening Assessment section below.

6 Screening Assessment

6.1 Introduction

This screening exercise will focus on assessing the likely adverse effects of the project on the Natura 2000 sites identified in Section 4 above.

This section identifies the potential impacts which may arise as result of the proposed project. It then goes on to identify how these impacts could potentially impact on Natura 2000 sites listed in Table 4-1. The significance of potential impacts is also assessed, with any potential in-combination effects also identified. The Natura 2000 sites to be assessed are:

- South Dublin Bay and River Tolka Estuary SPA (004024)
- South Dublin Bay SAC (000210)
- Rockabill to Dalkey Island SAC (003000)
- Dalkey Islands SPA (004172)
- Ballyman Glen SAC (000713)

6.2 Assessment Criteria

6.2.1 Description of the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites

Potential adverse impacts that could cause a significant effect on the qualifying interests of the Natura 2000 sites, during the construction and operational phases of the project, will impact on the sites via surface water pathways, groundwater pathways and land and air pathways. Surface water pathways can impact on surface water quality and surface water dependent habitat quality. Groundwater pathways can impact on groundwater quality and quality of groundwater dependent habitats. Land and air pathways can impact by release or discharges of sediment or chemicals to surface or groundwater.

The proposed project is not anticipated to impact on the qualifying interests of any of the identified SACs or SPAs. The rationale for excluding impacts via the main pathways is given in more detail in the following section.

6.2.2 Surface Water Pathways

The proposed site lies within the WFD sub-catchment Dargle_SC_010, which it shares with only one Natura 2000 site; namely Ballyman Glen SAC; this site is located upstream from the site therefore excludes it from the surface water pathway's Zol.

The distance of the Natura 2000 sites within the schemes Zol are shown in Table 6-1 below. For comparison distances are given from the upstream extent of the scheme (Johnstown Road) and the most downstream part of the scheme (Seafield Culvert outlet).

Table 6-1: Distances via surface water connection to Natura 2000 sites within the schemes Zol

Natura 2000 site	Distance via surface water connection from upstream extent (km)	Distance via surface water connection from downstream extent (km)
Rockabill to Dalkey Island SAC (003000)	4.9 km	1.3 km
Dalkey Islands SPA (004172)	6.2 km	2.6 km
South Dublin Bay and River Tolka Estuary SPA (004024)	10.8 km	7.2 km
South Dublin Bay SAC (000210)	12.7 km	9.1 km
Ballyman Glen SAC (000713)	No Connection	No Connection

The proposed project encompasses the entirety of the Deansgrange Stream (Kill of the Grange_010) which has its outfall into the Irish Sea. The site is located close to the Carrickmines Stream (Carrickmines Stream_010) which drains into the Shanganagh River (Shanganagh_010) which also has its outfall into the Irish Sea (Figure 6-1, overleaf). During the works, potential sediment could be released and accidental oil and concrete spill could enter the stream which would end up downstream. However, given the small scale of the project, any such pollutions would be limited and there would be a significant dilution effect when the water enters the Irish Sea. Rockabill to Dalkey Island SAC covers a length of approximately 40km off the Dublin coast and any potential impact from the project is not anticipated to be significant. Though the South Dublin SAC and the South Dublin Bay and River Tolka Estuary SPA Natura 2000 sites are located within a different sub-catchment, they are also connected to the outfall of the Deansgrange Stream by the Irish Sea and Dublin Bay, however due to distance and dilution any impact from the project on these Natura sites is also not anticipated to be significant.

The QIs of Dalkey Islands SPA (Roseate Tern, Common Tern and Arctic Tern) are foraging in the Irish Sea and any potential impact on their prey species could indirectly impact on the success of their populations. Given the small scale of the project and localised nature of the project, it is not anticipated to have a significant impact on these species.

Therefore, given the distance to Natura 2000 site which contributes to a high level of dilution of pollutants, a significant impact on any of the QIs is not expected for any of the Natura 2000 sites

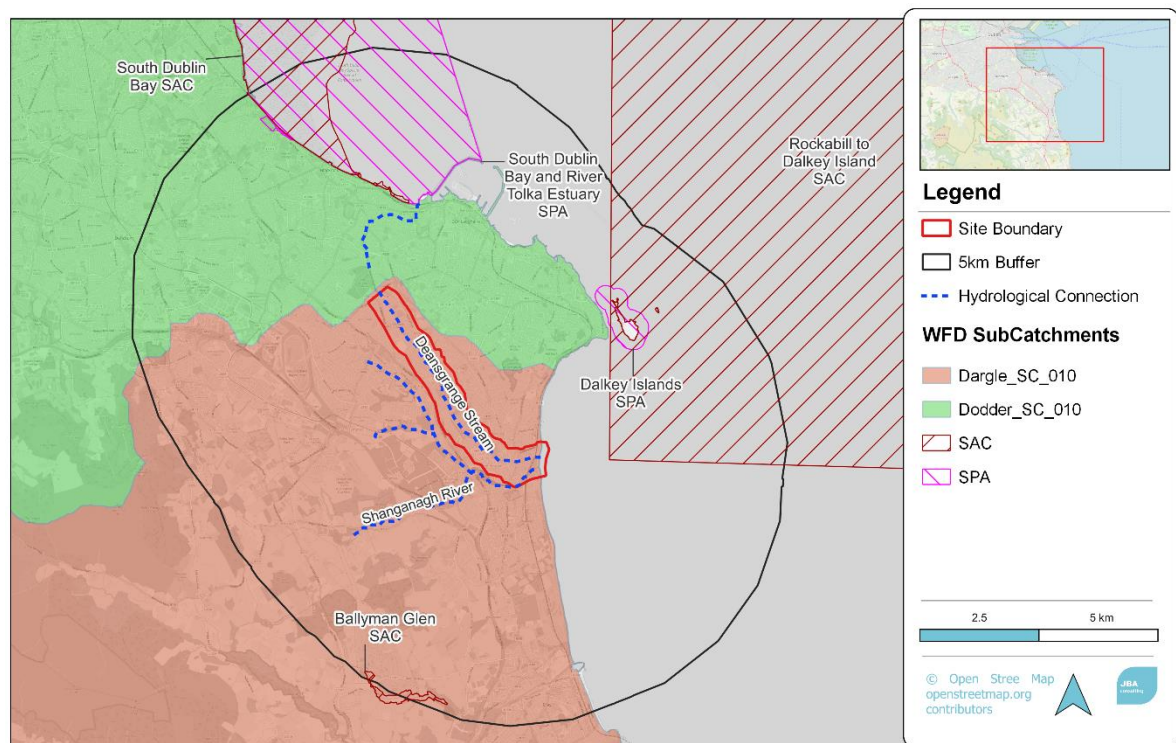


Figure 6-1: WFD sub-catchments of the area surrounding the project site (OSM, 2023)

6.2.3 Groundwater

The majority of the site is located within the Wicklow (EU_EA_G_076) groundwater body (Figure 6-2), with small sections passes through the Industrial Facility (P0019-02) (EA_G_091) and the Killcullen (EA_G_003) groundwater body which it shares with the South Dublin Bay SAC and the South Dublin Bay and River Tolka Estuary SPA. The Dalkey Islands SPA is also designated as being in this groundwater body, however its separation from the mainland as an island excludes it from the groundwater's Zol. The Ballyman Glen SAC is located in the Enniskerry Gravels (IE_EA_G_038) groundwater body, while the Rockabill to Dalkey Island SAC is marine based and is unaffected by groundwater body related impacts. The area of the site is heavily dominated by Made/Build land, with a low recharge coefficient and a poorly connected and low permeable aquifer.

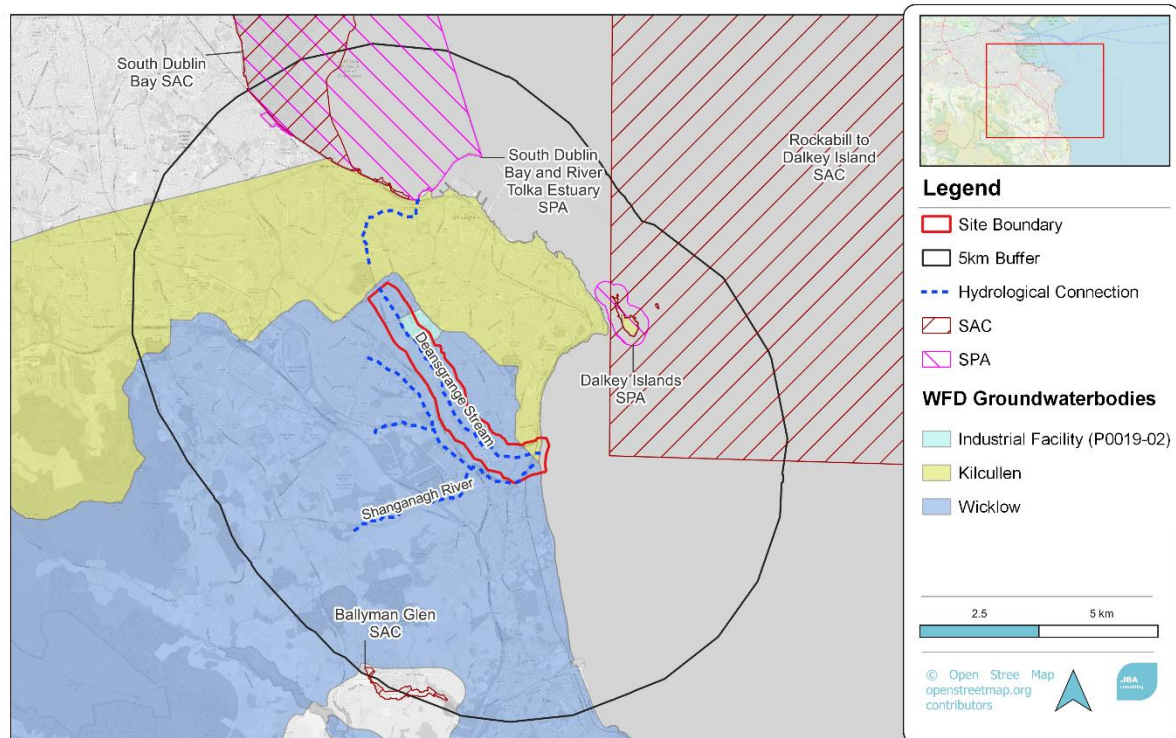


Figure 6-2: Groundwater bodies of the area surrounding the project

The low retention, permeability, and vulnerability of the geology of the area, along with the distance needed to travel to Natura 2000 sites, results in no expected significant impact on any of the QIs for any of the Natura 2000 sites identified within the Zol.

6.2.4 Land and Air

Land (physical on-site and noise disturbance)

Since the proposed site is in an urban area, is a very small development and is not directly adjacent to any Natura 2000 site, impacts via land pathways are not expected on any of the Natura 2000 sites. The site is approximately 1.3km from Rockabill to Dalkey Island SAC, 1.8km from South Dublin Bay and River Tolka Estuary SPA, 2.6km from Dalkey Islands SPA, and 4.8km from Ballyman Glen SAC, thus the proposed works will not cause disturbance to any of the QIs of the SACs and SPAs.

Noise

The threats of lower importance facing the Common Porpoise within Rockabill to Dalkey Island SAC include Noise nuisance and noise pollution (NPWS, 2019). The induction of behavioural changes based on acoustical disturbance is known as the Temporary Threshold Shift (TTS), which suggested by Tousard *et al* (2015) could be reached at SEL of 100-110db in relation to pulses that are derived from pile driving works. A review of the EIAR for the River Poddle Flood Alleviation Scheme (OPW &

O'Dwyer Ltd., 2020) and the Arklow Bank Wind Park NIS (RPS, 2021) indicates that sound level data on piling and ancillary operations in Ireland estimates typical noise levels to reach 89dB at 10m, meanwhile the TTS injury zone for porpoises is estimated to a several hundred meters. Given that the distribution of the porpoise is "not restricted by artificial barriers to the site" (NPWS 2019) and they are not confined to the limited range of the noise disturbance, the low radius of effect from piling activity (RPSGroup, 2021), and the typical levels noise levels of piling fall under the TTS range for porpoise (Nicholas O'Dwyer Ltd., 2020), **there is no expected significant impact on any of the QIs for any of the Natura 2000 sites identified within the Zol.**

Air Pollution

Dust release and vehicle emissions can travel considerable distances and could potentially affect the Annex habitats and species of the five Natura 2000 sites, even if they are not located within close distance to the proposed project. The distance and direction of travel is dependent upon wind speed and direction. The proposed site has a west south-west prevailing wind year-round (Windfinder.com, 2022), therefore, any dust generated on-site will most likely be transported towards Rockabill to Dalkey Island SAC and Dalkey Islands SPA. South Dublin Bay and River Tolka Estuary SPA and South Dublin Bay SAC are located north of the site and not in the general direction of the wind. Given the small scale of the project, the urban location and the distance from the Natura 2000 sites (>2.7km), **any dust and vehicle emissions are not anticipated to have a significant impact on the QIs of the Natura 2000 sites.**

6.2.5 Cumulative Impact

The Plans listed in Section 5 are not considered to have a cumulative impact together with the proposed project. The County Development Plan has been subject to a separate Appropriate assessment (DLRCC, 2022b) and incorporates mitigations to prevent significant impact to any Natura 2000 sites. Both the Greater Dublin Drainage Strategy and The River Basin Management Plan aim to improve the water quality and are not anticipated to have a negatively cumulative impact on any of the Natura 2000 sites.

Of the projects in the vicinity, the potential for cumulative impact would be via surface water during construction, any impacts are considered to be not significant given the distance to the Natura 2000 sites and cumulative impacts are therefore not anticipated.

6.2.6 Summary

Due to the site location and the nature and scale of the proposed project, impacts via surface water, groundwater and land and air pathways to the listed Natura 2000 sites are not anticipated, either alone or in combination with other projects.

6.2.7 Description of likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 sites

Project Elements	Comment
Size and scale	The proposed scheme consists of the installation of a 1200mm diameter tunnelled overflow culvert underneath the railway, the provision of additional storage in Glenavon Park, a series of flood containment walls upstream of the Killiney Hill Rd bridge, including upgrading the parapet of the existing bridge, upgrade works in the existing culvert at Granville Rd, the upgrade of the existing screen at the entry of the Seafield culvert, installation of additional coarse screens and the provision for future adaptation of all the measures listed to the impact of climate change on the modelled flood levels.
Land-take	There will be no direct land take from any of Natura 2000 sites.
Distance from Natura 2000 site or key features of the site	The Natura 2000 sites and their proximity (plus hydrological distance) to the proposed site:
	<ul style="list-style-type: none"> • South Dublin Bay and River Tolka Estuary SPA • 1.8km (9.1km)

Project Elements	Comment
	<ul style="list-style-type: none"> • South Dublin Bay SAC • Dalkey Islands SPA • Rockabill to Dalkey Island SAC • Ballyman Glen SAC <ul style="list-style-type: none"> • 1.8km (7.2km) • 2.6km (2.6km) • Direct Contact • 4.8km (na)
Resource requirements (water abstraction etc.)	None
Emissions (disposal to land, water or air)	<p>Construction Phase:</p> <p>Water</p> <p>Potential pollutants will be utilised at the site, including diesel and engine/hydraulic oils and topsoil will be removed. These pollutants could potentially spill or leak into the surface water and groundwater and silt could runoff into surface water. There is no direct surface water or groundwater connection between the site and Ballyman Glen SAC. Pollutants that enter the stream would be transferred into the sea and flow directly into Rockabill to Dalkey Island SAC, while also needing to travel a further 2.9km to Dalkey Islands SPA, 7.2 km to South Dublin Bay and 9.1km to River Tolka Estuary SPA and South Dublin Bay SAC, while the stream feeds directly into Rockabill to Dalkey Island SAC, where the currents and movement of the water within those distances would dilute any pollutants past the point of being harmful. Therefore, significant impacts are not anticipated via surface water and no significant impacts are anticipated via groundwater pathways to these Natura 2000 sites</p> <p>Air</p> <p>Excavations at the site will produce loose top and sub soil, and emissions may arise from working machinery however the proposed site has a south-west prevailing wind year-round, therefore, any dust generated on-site will most likely be transported away from the Natura 2000 sites within the dust settlement zone.</p> <p>Impactful operational air emissions are not anticipated for the proposed development</p> <p>Operation Phase:</p> <p>During operation, the proposed operations of the project (and its related emissions) are not expected to directly impact any of the Natura 2000 sites, due to their distance and small-scale operation. Therefore, there will be no permanent impacts on any Natura 2000 site.</p>
Excavation requirements	<p>Maximum depths of 8.0m will be reached during the construction of tunnelled culvert pipe under the railway near the streams outfall, however the majority of excavations will not be as deep as this</p> <p>Excavation will be required at throughout the project regarding the works related to cluverting of the river. This includes:</p> <ul style="list-style-type: none"> • A 1200mm concrete pipe jacked sewer c.47m, installed underneath the existing railway line, including entry and exit shafts and temporary surcharge zones. • A 1800mm concrete pipe c.119m section installed using open cut techniques between the exit shaft and the outfall • Within Glenavon Park there will be excavation of two additional ponds and landscaping works to minimise the need for a hard defences downstream.

Project Elements	Comment
	<ul style="list-style-type: none"> Works underneath Granville Road consist of the replacement of 2 No. twin Concrete 1050mm dia. pipes which traverse beneath the existing road structure in a North-South direction with a new concrete culvert (inverted U shape) with dimensions of 1.2m high x 3m wide <p>The excavations are expected to be at a maximum of 8.0m to account for the tunneling underneath the railway, meanwhile the pipelines' excavations will be shallower.</p>
Transportation requirements	<p>Temporary Impacts:</p> <p>Levels of traffic to the site during the construction phase will be temporary in nature. All access to the site will be on pre-existing roads and transportation requirements will not affect Natura 2000 sites.</p> <p>Permanent Impacts:</p> <p>Traffic to the site is not anticipated to change/increase after the bridge installation and cycle track construction is done. Given the size, scale and location of the proposed project, transportation requirements will not affect Natura 2000 sites.</p>
Duration of construction, operation, decommissioning etc.	<p>Works are expected to continue until July 2026.</p> <p>The different areas of works will be performed mainly in a phased approach, with a minor overlap between main work elements such as the tunnelling of the culvert, and the secondary parts of the project.</p>
Other	<p>Any materials excavated will be removed to a registered waste facility, by a licensed haulier.</p>

6.2.8 Description of likely changes to the Natura 2000 sites

Potential Impact	Comments
Reduction of habitat area	<p>There will be no reduction in habitat area for any of the Natura 2000 sites.</p>
Disturbance to key species	<p>Temporary Impacts:</p> <p>The construction works will temporarily increase the noise level and disturbance locally and along the surrounding coastline. However, no significant impacts are anticipated to key species given scale and temporary nature of the construction phase and distance from the Natura 2000 sites.</p> <p>Permanent Impacts:</p> <p>No disturbance to key species is anticipated during operation of the project.</p>
Habitat or species fragmentation	<p>No habitat or species fragmentation is likely as the project poses no restrictions to habitats or species of the Natura 2000 sites.</p>
Reduction in species density	<p>There will be no temporary or permanent reduction in species density within any of the Natura 2000 sites, or any QIs of these sites.</p>
Changes in key indicators of conservation value	<p>Potential temporary changes to key elements (i.e. water quality) Natura 2000 sites are not anticipated.</p>

Potential Impact	Comments
(water quality etc.)	
Interference with the key relationships that define the structure of the site	There will be no interference with the key relationships that define the structure of the sites.
Interference with key relationships that define the function of the site	There will be no interference with the key relationships that define the function of the sites.

Provide indicators of significance as a result of the identification of effects set out above in terms of:

Potential Impact	Indicators
Loss (Estimated percentage of lost area of habitat)	No Natura 2000 sites will experience a direct loss in habitat area.
Fragmentation	Fragmentation of habitat and/or species is not anticipated.
Disruption & disturbance	Disruption and/ or disturbance is not anticipated.
Change to key elements of the site (e.g. water quality etc.)	Potential temporary changes to key elements (i.e. water quality) of the Natura 2000 sites are not anticipated.

6.2.9 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown

Following initial screening and based upon best scientific judgement, it is concluded that there will be no likely significant effects from the project on the following Natura 2000 sites either alone or in combination with any other plans or projects:

- South Dublin Bay and River Tolka Estuary SPA (004024)
- South Dublin Bay SAC (000210)
- Rockabill to Dalkey Island SAC (004172)
- Dalkey Islands SPA (004172)
- Ballyman Glen SAC (000713)

6.3 Concluding Statement

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

On the basis of the screening exercise carried out above, it can be concluded that the possibility of any significant impacts on any European Sites, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

Appendices
A Habitat map

A.1 Map Subset A



Legend

Site Boundary

Habitat (Line):

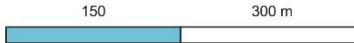
- BL3
- FW2

Habitat (Area):

- GA2
- FL8

Habitat (Line):

- WD1
- WS1



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A.2 Map Subset B

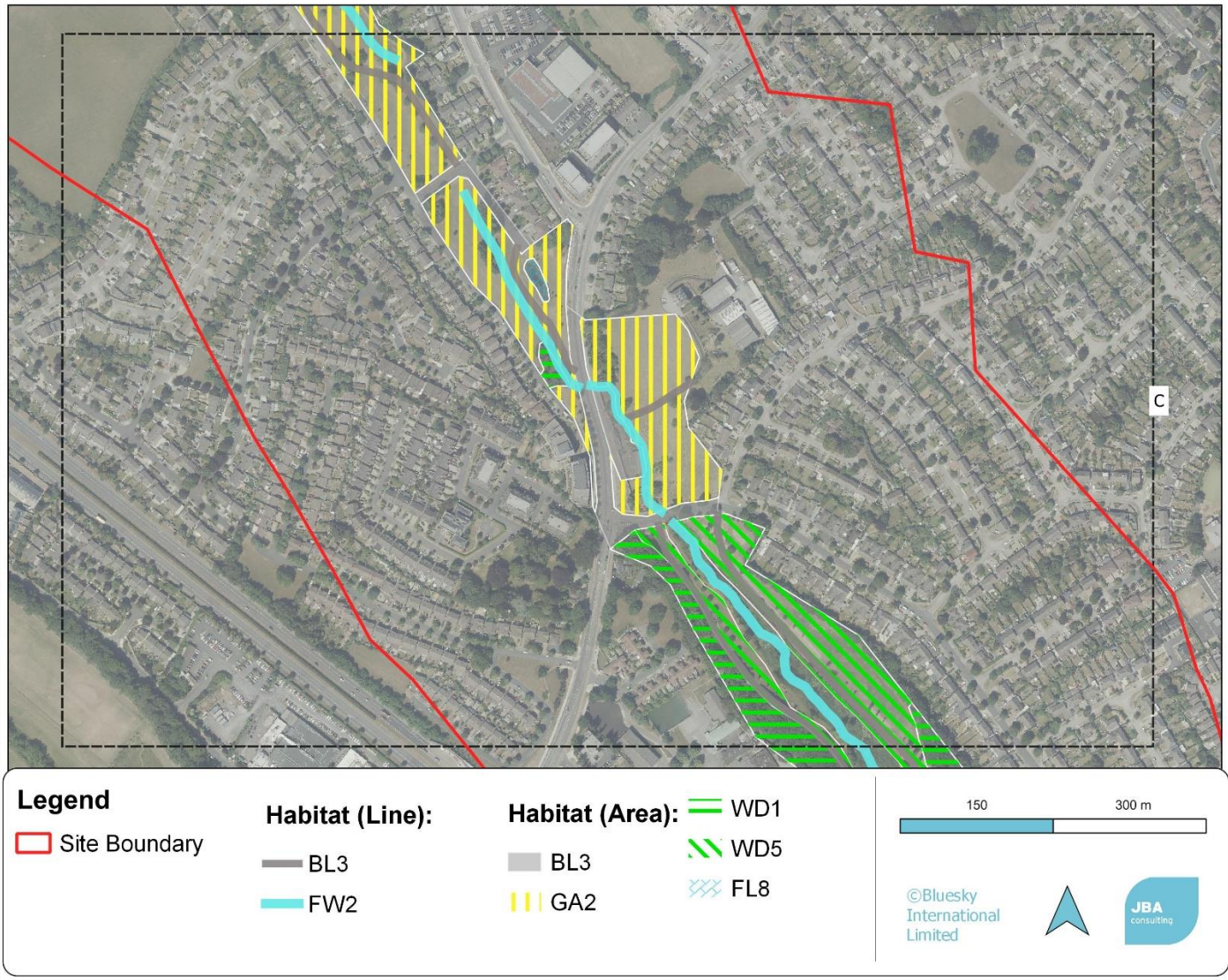


Legend		
Site Boundary	Habitat (Line):	Habitat (Area):
	BL3	BL3
	FW2	GA2
	WL1	WD1

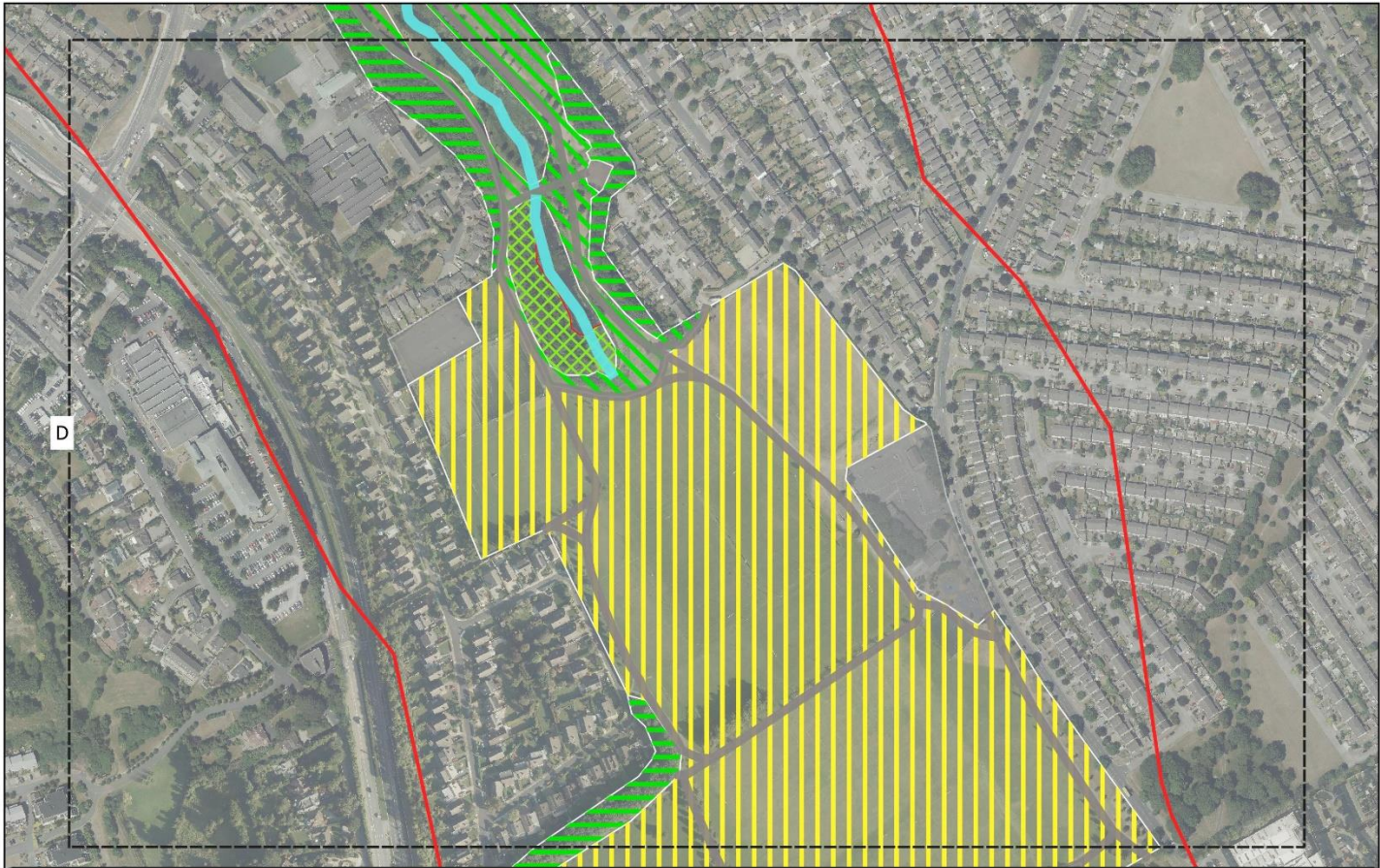
150 300 m

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A.3 Map Subset C



A.4 Map Subset D



Legend

Site Boundary

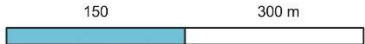
Habitat (Line):

BL3
FW2

Habitat (Area):

BL3
GA2

WD1
WD5
WS1



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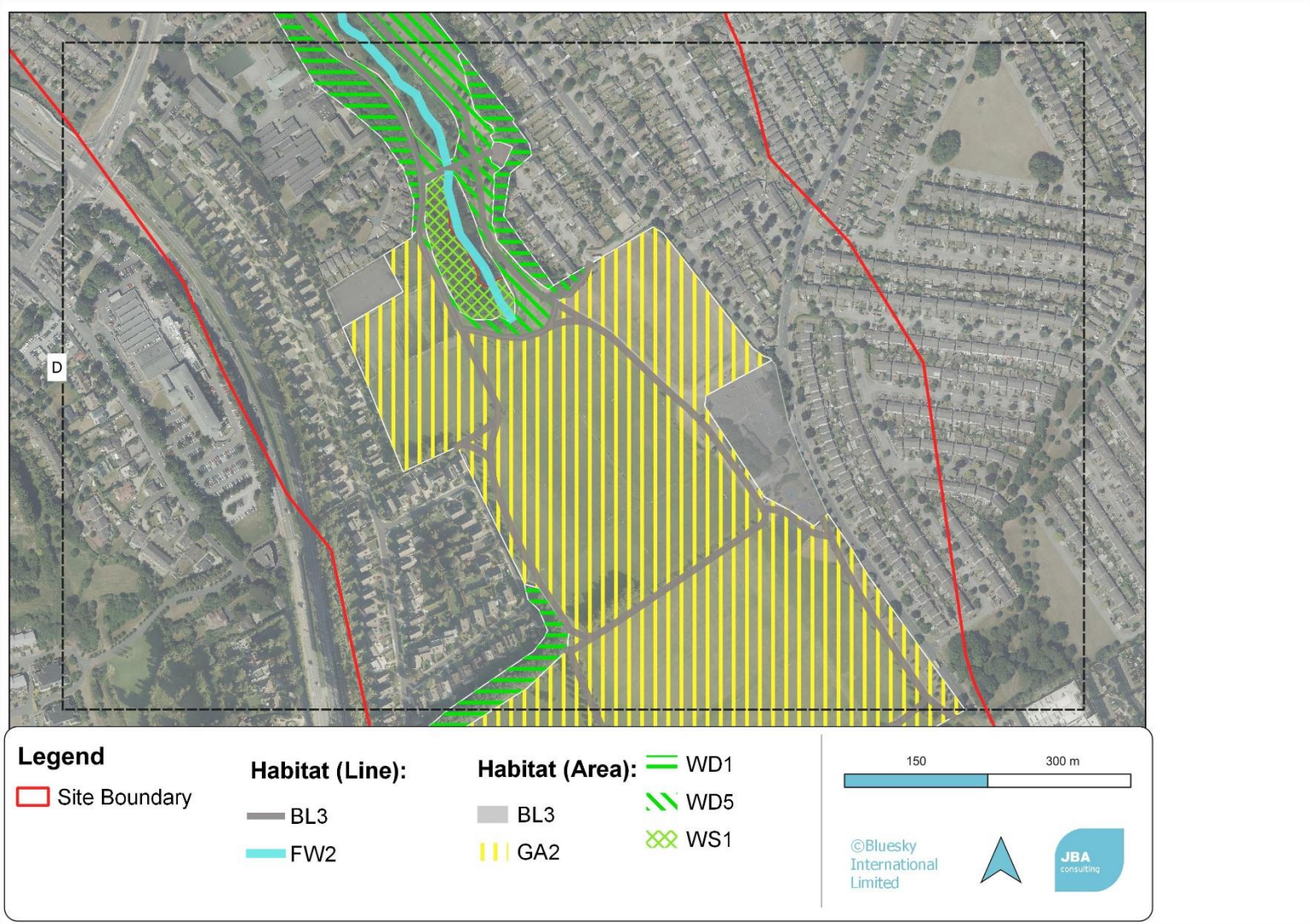
A.5 Map Subset E



Legend		Habitat (Line):		Habitat (Area):	
Site Boundary	BL3	BL3	WD1	WD5	WS1
	FW2	GA2			

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A.6 Map Subset F



A.7 Map Subset G



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